

LEASE NO.	FEE
1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000
11	1100
12	1200
13	1300
14	1400
15	1500
16	1600
17	1700
18	1800
19	1900
20	2000
21	2100
22	2200
23	2300
24	2400
25	2500
26	2600
27	2700
28	2800
29	2900
30	3000
31	3100
32	3200
33	3300
34	3400
35	3500
36	3600
37	3700
38	3800
39	3900
40	4000
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65	6500
66	6600
67	6700
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69	6900
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89	8900
90	9000
91	9100
92	9200
93	9300
94	9400
95	9500
96	9600
97	9700
98	9800
99	9900
100	10000

WELL NAME   COPPER EAGLE GAS STORAGE #1-19 SUNCOR

LOCATION NE NE SEC 19 TWP 2 N RANGE 1 W FOOTAGE 330' FNL 1130" FEL

ELEV 1053' GR            KB    SPUD DATE 7/3/2002    STATUS            TOTAL  
COMP. DATE            DEPTH 8307'

CONTRACTOR NABORS DRILLING RIG 477

7A 8-7-02

<u>CASING SIZE</u>	<u>DEPTH</u>	<u>CEMENT</u>	<u>LINER SIZE &amp; DEPTH</u>
--------------------	--------------	---------------	-------------------------------

DRILLED BY ROTARY YES

30" 75'

DRILLED BY CABLE TOOL NONE

13 3/8"                      2106'      1410 sx

PRODUCTIVE RESERVOIR N/A

9 5/8"      7463'      1673 sx

INITIAL PRODUCTION N/A

[illegible]

ELECTRIC LOGS	PERFORATED INTERVALS	PROD. INTERVALS	SAMPLE LOG _____
			SAMPLE DESCRP. _____
			SAMPLE NO. _____
			CORE ANALYSIS _____
			DSTs _____
REMARKS STRATIGRAPHIC TEST			APP. TO PLUG _____
			PLUGGING REP. _____
			COMP. REPORT _____

WATER WELL ACCEPTED BY

BOND CO. CONTINENTAL CASUALTY CO

BOND NO. 929237470

BOND AMT. \$ 10,000

DATE JUNE 2002

FILING RECEIPT 3115

CANCELLED

ORGANIZATION REPORT 10/31/2001

APL NO. 02-013-20028

LOC. PLAT YES

WELL BOOK      YES              PLAT BOOK      YES

DATE ISSUED 6/6/2002

DEDICATION N/A

PERMIT NUMBER 911

(over)

**OIL AND GAS CONSERVATION COMMISSION**

416 West Congress #100

Tucson, Arizona 85701

Minutes of Meeting

January 23, 2004

Present:

Dr. J. Dale Nations, Chairman

Mr. Robert L. Jones, Vice-Chairman

Mrs. Michele P. Negley, Member

Mr. Robert L. Wagner, Member

Dr. Larry D. Fellows, Director and State Geologist

Mr. Steven L. Rauzi, Oil and Gas Administrator

Dr. J. Dale Nations, Chairman, called the regular Commission Meeting of January 23 to order at 10:00 a.m. in Room 321, State Land Department Building, Phoenix, Arizona.

COPPER EAGLE GAS STORAGE WELLS 1-24 SUNCOR (PERMIT 909), 1-19 SUNCOR (PERMIT 911), AND 1-12 KAKERLEE (PERMIT 912), MARICOPA COUNTY

Mr. Rauzi discussed El Paso's written request for temporary abandonment and described the mechanical integrity of the wells. He recommended temporary abandonment for a period of five years. Mr. Gettman reported that El Paso purchased Copper Eagle in August 2003 and described the ongoing testing to determine the viability of their gas-storage project.

Mr. Wagner moved, seconded by Mr. Jones:

THAT THE COMMISSION APPROVE COPPER EAGLES'S REQUEST FOR  
TEMPORARY ABANDONMENT FOR A PERIOD OF FIVE YEARS

Motion carried unanimously.

# SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator Copper Eagle Gas Storage LLC - a subsidiary of El Paso Natural Gas  
 2. OIL WELL ☐ GAS WELL ☐ OTHER ☒ (Specify) Stratigraphic Test  
 3. Well Name SunCor Development 1-19  
 Location 330' FNL + 1130' FEL  
 Sec. 19 Twp. 2N Rge. 1W County Maricopa, Arizona  
 4. Federal, State, or Indian Lease Number, or lessor's name if fee lease SunCor Development

5. Field or Pool Name Lake - Glendale

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐ PULL OR ALTER CASING ☐  
 FRACTURE TREAT ☐ DIRECTIONAL DRILL ☐  
 SHOOT OR ACIDIZE ☐ PERFORATE CASING ☐  
 REPAIR WELL ☐ CHANGE PLANS ☐

(OTHER) \_\_\_\_\_

## SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐ WEEKLY PROGRESS ☐  
 FRACTURE TREATMENT ☐ REPAIRING WELL ☐  
 SHOOTING OR ACIDIZING ☐ ALTER CASING ☐  
TEMPORARY ABANDONMENT ☒

(OTHER) \_\_\_\_\_

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log, Form 4)

1. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.

In August of 2003 El Paso Natural Gas Company acquired Copper Eagle Gas Storage LLC (as a wholly owned subsidiary) and its assets including the temporally abandoned SunCor Development 1-19 Stratigraphic Test Well. El Paso Natural Gas is actively marketing the Copper Eagle Gas Storage project to provide natural gas storage services to meet the growing natural gas needs of our customers in Arizona. If we are successful in contracting for the development of the Copper Eagle gas storage caverns and receive the necessary permits from the Federal Energy Regulatory Commission, Environmental Protection Agency, Arizona Department of Environmental Quality, and Arizona Oil & Gas Conservation Commission, it is Copper Eagle's intent to convert the SunCor 1-19 to a Class 1 disposal well. At this point the well will be used to dispose of the brine that will be developed in solution mining the storage caverns at the project site approximately 5 miles to the northeast (Section 2, 2N, 1E).

Consequently, Copper Eagle Gas Storage LLC is requesting that the temporary abandonment status of SunCor Development 1-19 be extended for up to five years as provided for in AAC R12-7-125. Attached is a schematic of the current completion of the SunCor 1-19 and a copy of the Cement Bond Log for the SunCor 1-19. The cementing records and daily drilling and completion records including mechanical integrity testing for this well have previously been provided to the Commission.

8. I hereby certify that the foregoing is true and correct.

Signed

[Signature]

Title

Manager

Date

1-7-04

Permit No.

911

## STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION

Sundry Notice and Reports On Wells

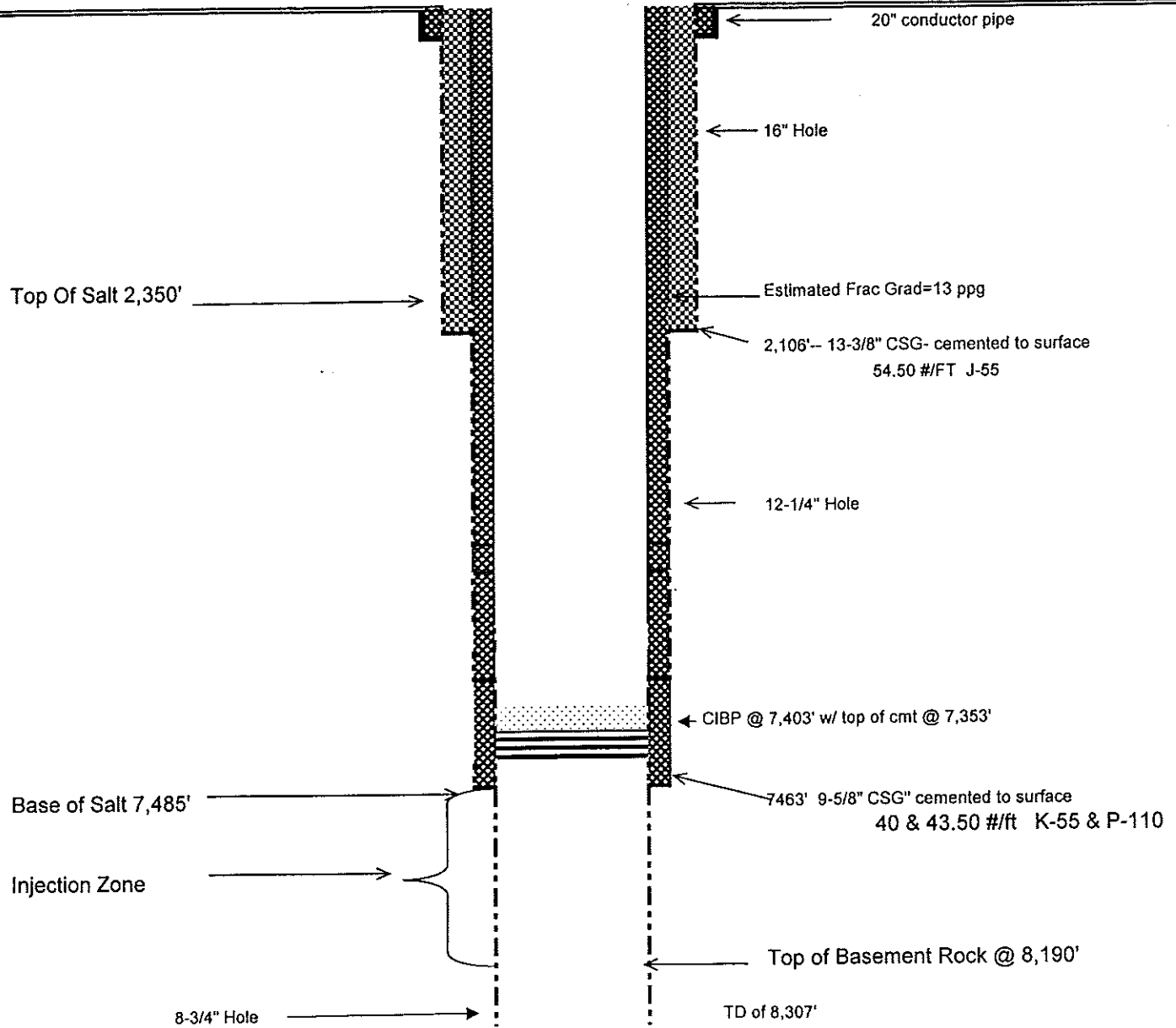
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Form No. 25

Copper Eagle Gas Storage, L.L.C.  
SunCor # 1-19  
Maricopa County, Arizona  
Luke-Glendale Field

911

WELLBORE SCHEMATIC



# SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator Copper Eagle Gas Storage LLC  
 2. OIL WELL ☐ GAS WELL ☐ OTHER ☒ (Specify) Stratigraphic Test  
 3. Well Name # 1-19 Suncor Stratigraphic Test  
 Location 330' FNL + 1130' FEL  
 Sec. 19 Twp. 2N Rge. 1W County Maricopa, Arizona  
 4. Federal, State, or Indian Lease Number, or lessor's name if fee lease Suncor

5. Field or Pool Name Luke - Glendale

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐ PULL OR ALTER CASING ☐  
 FRACTURE TREAT ☐ DIRECTIONAL DRILL ☐  
 SHOOT OR ACIDIZE ☒ PERFORATE CASING ☐  
 REPAIR WELL ☐ CHANGE PLANS ☐  
 (OTHER) Reenter and conduct

## SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐ WEEKLY PROGRESS ☐  
 FRACTURE TREATMENT ☐ REPAIRING WELL ☐  
 SHOOTING OR ACIDIZING ☐ ALTER CASING ☐  
 ABANDONMENT ☐  
 (OTHER) \_\_\_\_\_

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log, Form 4)

1. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.

See Attached Prognosis + Schematics

**APPROVED**

By SL Rain  
 Date 9-11-03

Subject to conditions in A.A.C. R12-7-117 and R12-7-179. And that all work to be performed substantially as outlined in the attached prognosis & schematics. SLR

8. I hereby certify that the foregoing is true and correct.

Signed Greg Setman Title Manager Date 9/10/03

Permit No. 911

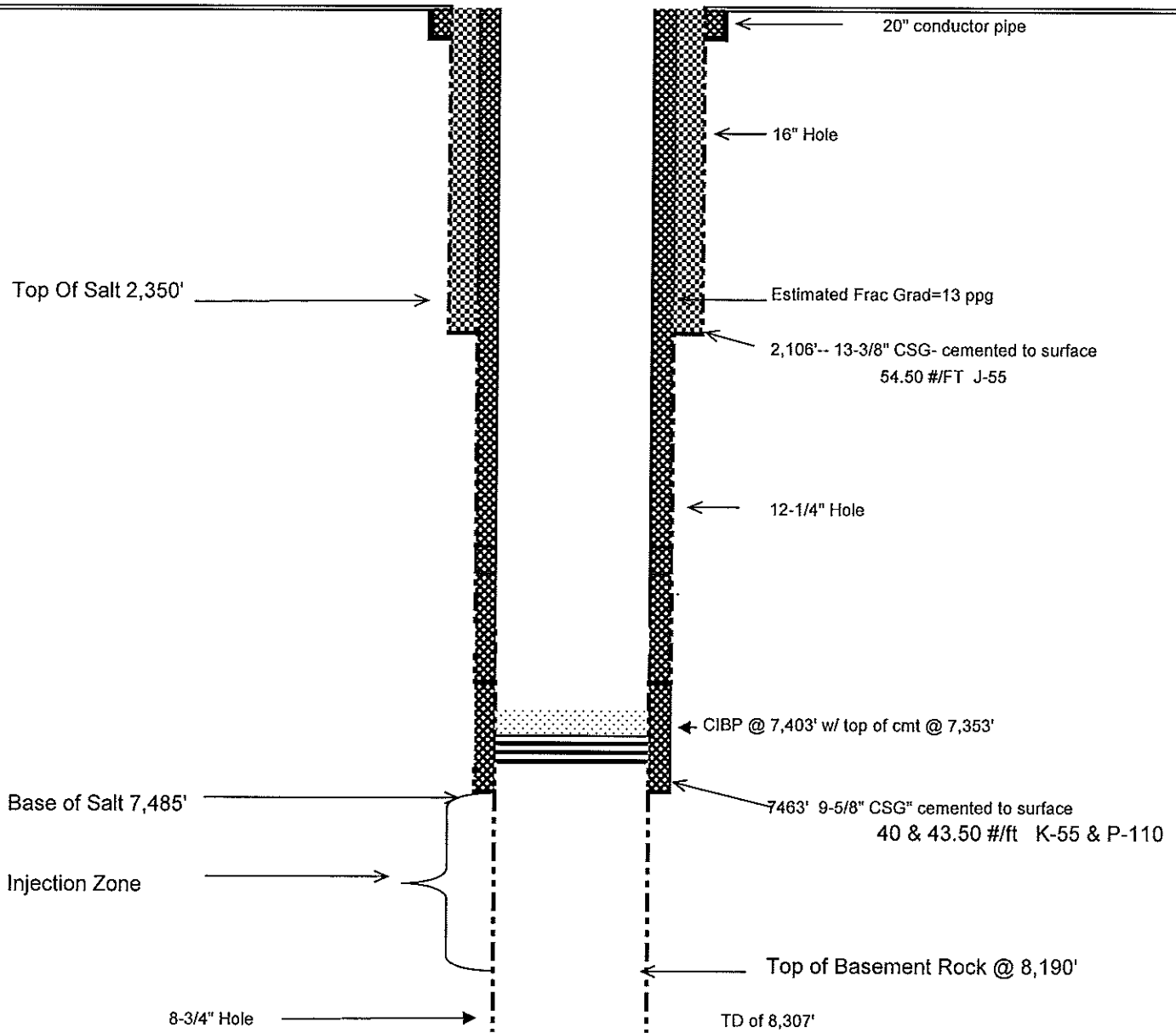
STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Sundry Notice and Reports On Wells  
 File One Copy  
 Form No. 25

## **Prognosis for Proposed Work on Suncor #1-19 Stratigraphic Test Copper Eagle Gas Storage LLC a subsidiary of El Paso Natural Gas**

1. Move in and rig up workover rig. Nipple up 5000 psi BOP's and test to 5000 psi. (approximately October 15, 2003)
2. Trip in hole with 8 5/8" or 8 1/2" mill, 6- 6" Drill Collars and 3 1/2" rental tubing. Tag cement at 7350'. Mill up cement and Cast Iron Bridge Plug (CIBP).
3. Continue washing to Total Depth @ 8300'
4. Pull out of hole with tubing.
5. Trip in hole with Baker Packer and 3 1/2" tubing. Set Packer at +/- 7,300'.
6. Install injection tree.
7. Pressure test casing-tubing annulus at 2000 psi for 30 minutes to verify casing and tubing integrity
8. Rig down and move out Workover rig.
9. Move in & rig up Coiled Tubing Unit. Trip in hole jetting fluid with Nitrogen to 8200'. Jet from 8200' to 7500' for 24 hours.
10. Jet mud remover Versol 1 from casing shoe to Total Depth. Shut in 1 hour. Then circulate well clean.
11. Pump mud acid treatment of 15% HCL and 13.5:1.5 mud acid while reciprocating across the open hole. Over flush with ammonium chloride water and displace down from the casing shoe.
12. Pull out of hole with coiled tubing.
13. Rig down coiled tubing unit.
14. Rig up injection pumps and install Frac tanks and begin hauling in injection fluid.
15. Run bottom hole pressure recorder on stainless steel wire line to approximately 7500'.
16. Begin injection @ 5 BPM and monitor pump pressure, rate and specific gravity for 60 days. (approx. November 1, 2003)
17. Continuously monitor injection rate and surface pressure. If surface flowing pressure rises above 2000 psig, reduce rate. At 5 BPM and 2000 psi at the surface the maximum bottom hole flowing pressure at the casing shoe will be approximately 5430 psig which is a pressure gradient of .727 psi per ft., well below the frac gradient of approximately .94 psi/ft.
18. Continuously monitor brine storage tanks, pumping equipment and wellhead for surface and annular leaks.
19. Pull bottom hole pressure recorder every 30 days to retrieve pressure falloff data.
20. After 60 days. Rig down Injection pumps and frac tanks. (approx December 31, 2003)  
Continue to monitor BHP for an additional 120 days
21. Move in Workover rig. (approximately May 1, 2004)
22. Release packer and pull out of hole with tubing.
23. Trip in hole with CIBP and tubing set CIBP at 7350'. Spot 100' cement on plug & pull out of hole laying down tubing
24. Install dry hole flange. Clean up location and move out all equipment. (approximately May 5, 2004)

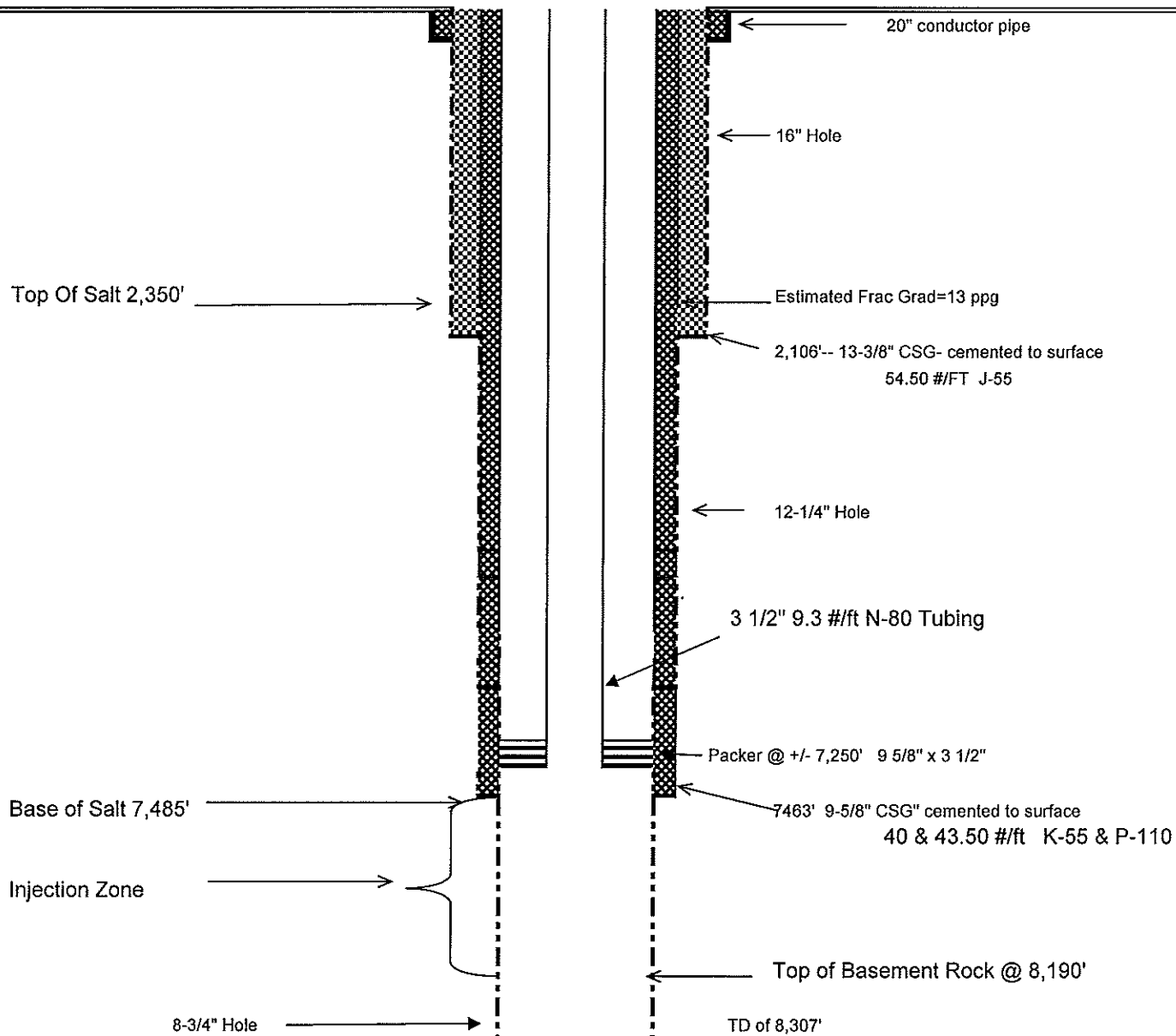
Copper Eagle Gas Storage, L.L.C.  
SunCor # 1-19  
Maricopa County, Arizona  
Luke-Glendale Field

WELLBORE SCHEMATIC



Copper Eagle Gas Storage, L.L.C.  
SunCor # 1-19  
Maricopa County, Arizona  
Luke-Glendale Field

WELLBORE SCHEMATIC





**A.A.C. R12-7-117. Artificial Stimulation of Oil and Gas Wells**

- A.** An operator shall report the artificial stimulation of any well to the Commission in writing within 15 days of the stimulation showing the type of stimulation, the amounts and types of materials used, stimulation pressures applied, and the flow and pressure results before and after stimulation.
- B.** If the artificial stimulation of a well results in any damage to the producing formation, a freshwater formation, casing, or casingseat that permits communication between fluid-bearing zones, the operator shall immediately notify the Commission and proceed with diligence to correct the damage. If the artificial stimulation results in irreparable damage to the well, the operator shall plug and abandon the well pursuant to R12-7-127.

**A.A.C. R12-7-179. Testing and Monitoring of Injection Wells**

- A.** The operator of an injection well shall file a weekly sundry report with the Commission on all drilling, completion, recompletion, and workover operations .
- B.** The operator of an injection well shall monitor operations to ensure that injection pressure at the wellhead does not exceed the maximum pressure authorized in the permit, and that no injection shall cause movement of injection or formation fluids into an underground source of drinking water.
- C.** The operator shall keep accurate records of the amount of oil, gas, water, or geothermal resources produced, the volume of substances injected, the average and maximum pressure used for injection, the nature of the injected fluid. The operator of an enhanced recovery or disposal well shall submit a report as required in R12-7-187. The operator of a storage well shall submit a report as required in R12-7-185.
- D.** The operator shall run the following pressure or monitoring tests on new injection wells to establish the mechanical integrity of the tubing, casing, and packer. Existing wells being converted to an injection well shall be tested in the same manner and shall maintain the same mechanical integrity as a new well.
  - 1.** The casing-tubing annulus above the packer shall be tested upon completion and at least once every 5 years, under the supervision of the Commission, at a pressure equal to the lesser of the maximum authorized injection pressure or 1000 psi, provided that no testing pressure shall be less than 300 psi. Documentation of the test shall be submitted to the Commission. Test pressures shall be applied for a period of 30 minutes. If a drop of more than 10 percent of the test pressure should occur, corrective measures shall be applied. If the tubing, casing, or packer cannot be brought up to standard, the well shall be plugged and abandoned in accordance with R12-7-126 and R12-7-127.
  - 2.** The Commission may require the operator to run a tracer survey, a temperature log, or a noise log to demonstrate the absence of fluid movement in vertical channels adjacent to the injection well.
- E.** Mechanical failure or downhole problems which indicate an injection well is not, or may not be, directing the injected fluid into the permitted injection zone may be cause to shut in the well. The operator shall notify the Commission within 24 hours of any such failure or problem. A written notice shall be filed within 5 days of the occurrence, with a plan for testing and repairing the well. If the well cannot be brought up to the standard required in subsection D, it shall be plugged and abandoned in accordance with R12-7-126 and R12-7-127.

# SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator Copper Eagle Gas Storage LLC  
 2. OIL WELL ☐ GAS WELL ☐ OTHER ☒ (Specify) Stratigraphic Test  
 3. Well Name Suncor # 1-19  
 Location 330' FNL & 1130 FEL  
 Sec. 19 Twp. 2N Rge. 1W County Maricopa, Arizona  
 4. Federal, State, or Indian Lease Number, or lessor's name if fee lease \_\_\_\_\_  
 5. Field or Pool Name Wildcat

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐ PULL OR ALTER CASING ☐  
 FRACTURE TREAT ☐ DIRECTIONAL DRILL ☐  
 SHOOT OR ACIDIZE ☐ PERFORATE CASING ☐  
 REPAIR WELL ☐ CHANGE PLANS ☐

(OTHER) \_\_\_\_\_

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐ WEEKLY PROGRESS ☐  
 FRACTURE TREATMENT ☐ REPAIRING WELL ☐  
 SHOOTING OR ACIDIZING ☐ ALTER CASING ☐  
 ABANDONMENT ☐

(OTHER) Temporary Abandonment ☒

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log, Form 4)

1. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

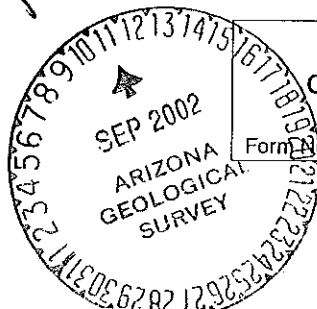
7-20-02 Drill to TD @ 8307' MD w/ 8 3/4" bit  
 7-29-02 Open hole from 8-3/4" to 12 1/4" from 2106' to 7465'  
 8-1-02 Run & cement 9 5/8" csg to surface w/ DV tool @ 5022'  
 8-2-02 Drill out DV tool  
 8-3-02 Set test pkr @ 7403'. RU Coiled tbg & Set in 7400 to 7900 ppm CL  
 8-5-02 Perform injection test @ 28 BPM.  
 8-6-02 Set 9 5/8" CIBP @ 7403'  
 8-6-02 Spot 19 sk's Neat Cement @ 7403' - 7353'.  
 8-7-02 Install Dryhole tree w/ Blind Flange & Needle valve.

Top of Salt @ 2350' MD 2350' TVD  
 Base of Salt @ 7485' MD 7477' TVD  
 Top of Basement @ 8190' MD 8182' TVD

8. I hereby certify that the foregoing is true and correct.

Signed James A. Dwyer Title Drilling Eng Date 9-9-02

Permit No. 911



STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Sundry Notice and Reports On Wells  
 File One Copy

Form No. 25

# SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator Copper Eagle Gas Storage LLC  
 2. OIL WELL ☐ GAS WELL ☐ OTHER ☒ (Specify) Stratigraphic Test  
 3. Well Name Suncor # 1-19  
 Location 330' SW 1/4 1130 ECL  
 Sec. 19 Twp. 2N Rge. 1W County Maricopa, Arizona  
 4. Federal, State, or Indian Lease Number, or lessor's name if fee lease  
Suncor Development Co.  
 5. Field or Pool Name \_\_\_\_\_  
 6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

## NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐  
 FRACTURE TREAT ☐  
 SHOOT OR ACIDIZE ☐  
 REPAIR WELL ☐  
 (OTHER) \_\_\_\_\_

PULL OR ALTER CASING ☐  
 DIRECTIONAL DRILL ☐  
 PERFORATE CASING ☐  
 CHANGE PLANS ☐

## SUBSEQUENT REPORT OF:

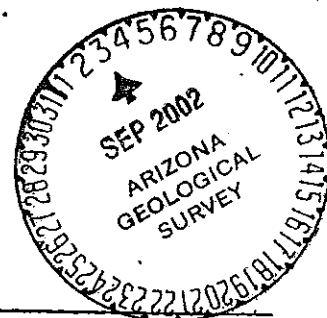
WATER SHUT-OFF ☐  
 FRACTURE TREATMENT ☐  
 SHOOTING OR ACIDIZING ☐  
 (OTHER) Temporary Abandonment

WEEKLY PROGRESS ☐  
 REPAIRING WELL ☐  
 ALTER CASING ☐  
 ABANDONMENT ☒

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log, Form 4)

1. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

1. Set 9 5/8" CIBP @ 7403'
2. Spot 19 sx Neat Cement - 7403 to 7353'
3. Install Dryhole tree w/ Blind Flange & needle valve



8. I hereby certify that the foregoing is true and correct.

Signed James A. Rungel

Title Drilling Eng.

Date 8-12-02

Permit No. 911

STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Sundry Notice and Reports On Wells  
 Form No. 25  
 File One Copy

# APPLICATION TO PLUG AND ABANDON

TEMPORARY ABD

FIELD W. Idcot

OPERATOR Copper Eagle Gas Storage LLC ADDRESS & PHONE 500 N. 5<sup>th</sup> St. Phoenix, AZ 85004-3109

LEASE NUMBER (Lessor's name if fee) Suncor Development WELL NO. 1-19

LOCATION 330' FNL & 1130' FEL Section 19 Township 2N Range 1-W  
Maricopa County Arizona

TYPE OF WELL Stratigraphic Test TOTAL DEPTH 8307'  
(Oil, Gas, or Dry)

ALLOWABLE (If Assigned)

LAST PRODUCTION TEST OIL \_\_\_\_\_ (Bbls.) WATER \_\_\_\_\_ (Bbls.)

GAS \_\_\_\_\_ (MCF) DATE OF TEST \_\_\_\_\_

PRODUCING HORIZON \_\_\_\_\_ PRODUCING FROM \_\_\_\_\_ TO \_\_\_\_\_

1. COMPLETE CASING RECORD	hole size	csg size	mts	Depth
Conductor	30"	24"	Steel	75'
Surface	1 1/16"	13 3/8"	54.50' J-55	2106'
Production	12 1/4"	9 5/8"	40 & 43.50' K-55 & P-110	7463'

## 2. FULL DETAILS OF PROPOSED PLAN OF WORK

1. Set 19 5/8" CIBP @ 7403'
2. Spot 19 sacks Class H Cement  
Top of cement @ 7403' to 7353'
3. Install Dryhole Flange on tree.

DATE COMMENCING OPERATIONS 8-6-02

NAME OF PERSON DOING WORK Charles Tucker ADDRESS 333 Texas St Suite 1425 Shreveport, LA 71101

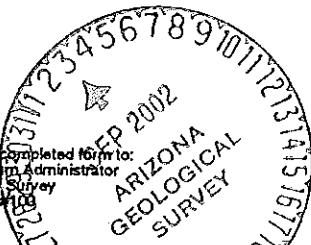
Signature

Title

Address

Date

Mail two copies of completed form to:  
Oil and Gas Program Administrator  
Arizona Geological Survey  
418 W. Congress, #100  
Tucson, AZ 85701



Date Approved \_\_\_\_\_

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

By \_\_\_\_\_

STATE OF ARIZONA

OIL & GAS CONSERVATION COMMISSION

Application to Plug and Abandon

File Two Copies

Form No. 9

Permit No. 911

TEMPORARY ABANDONMENT

2/96

# APPLICATION TO PLUG AND ABANDON

FIELD Wildcat TEMPORARY ABD  
 OPERATOR Copper Eagle Gas Storage ADDRESS & PHONE 500 N. 5<sup>th</sup> St. Phoenix, AZ 850-3109  
 LEASE NUMBER (Lessor's name if fee) Suncor Development Co. WELL NO. #1-19  
 LOCATION 330' FNL & 1130' FEL Section 19 Township 2N Range 1W  
Maricopa County, Arizona  
 TYPE OF WELL Stratigraphic Test TOTAL DEPTH 8307'  
 (Oil, Gas, or Dry)

ALLOWABLE (If Assigned) -

LAST PRODUCTION TEST OIL \_\_\_\_\_ (Bbls.) WATER \_\_\_\_\_ (Bbls.)  
 GAS \_\_\_\_\_ (MCF) DATE OF TEST \_\_\_\_\_

PRODUCING HORIZON \_\_\_\_\_ PRODUCING FROM \_\_\_\_\_ TO \_\_\_\_\_

	hole size	Csg size	Wts	Depth
1. COMPLETE CASING RECORD				
Conductor	30"	24"	Steel	75'
Surface	16"	13 3/8"	54.50' J-55 ST&C	2106'
Production	12 1/4"	9 5/8"	40' + 43.50' K-55 + P-110	7463'

## 2. FULL DETAILS OF PROPOSED PLAN OF WORK

Set 9 5/8" CIBP @ 7403'  
 Spot 19.5x Neat Cement 7403' - 7353'  
 Install Dry hole true  
 a. Blind flange w/ needle valve

DATE COMMENCING OPERATIONS 8-6-02

NAME OF PERSON DOING WORK Charles Tucker ADDRESS 333 Texas St. Suite 1425 Shreveport LA 71101



Mail two copies of completed form to:  
 Oil and Gas Program Administrator  
 Arizona Geological Survey  
 418 W. Congress, #100  
 Tucson, AZ 85701

Signature James A. [Signature]

Title Drilling Engineer

Address 333 Texas St. Suite 1425 Shreveport LA 71101

Date 8-12-02

Date Approved \_\_\_\_\_

STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION

By \_\_\_\_\_

STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Application to Plug and Abandon  
 File Two Copies  
 Form No. 9

Permit No. 911

TEMPORARY ABANDONMENT

## PLUGGING RECORD

TEMPORARY ABD

Operator <u>Copper Eagle Gas Storage LLC</u>		Address & Phone number <u>500 N 5th St. Phoenix, AZ 602-280-3109</u>	
Federal, State, or Indian Lease No. or lessor's name if fee lease <u>Suncor Development Co</u>		Well No. <u>1-19</u>	Field & Reservoir
Location of Well <u>330' FWL &amp; 1130' FEL</u>		Sec - Twp - Rge <u>19-2N-1W</u>	County <u>Maricopa</u>
Application to drill this well was filed in name of <u>Copper Eagle Gas Storage LLC</u>	Has this well ever produced oil or gas <u>No</u>	Character of well at completion (initial production): Oil (bbls/day) _____ Gas (MCF/day) _____ Dry? _____	
Date plugged <u>8-6-02</u>	Total depth <u>8307'</u>	Amount well producing when plugged: Oil (bbls/day) _____ Gas (MCF/day) _____ Water (bbls/day) _____	
Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of plugging	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used. Indicate zones squeeze cemented, giving amount of cement
<u>Volcanics</u>	<u>brine</u>	<u>7485' to 8307'</u>	<u>CJRP@ 7403'</u> <u>w/ 19 8x cement</u>

## CASING RECORD

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, etc.)	Packers and shoes
<u>24"</u>	<u>75'</u>	<u>-</u>	<u>75'</u>	<u>-</u>	<u>-</u>
<u>13 3/8</u>	<u>2106'</u>	<u>-</u>	<u>2106'</u>	<u>-</u>	<u>Shoe - 2106' - 3" Flood Collar @ 2058'</u>
					<u>Stage Collar @ 631'</u>
<u>9 5/8"</u>	<u>7463'</u>	<u>-</u>	<u>7463'</u>	<u>-</u>	<u>Stage PKr @ 7463' Flood Collar - 5022'</u>
					<u>Stage Collar @ 5022'</u>
Was well filled with heavy drilling mud, according to regulations? <u>10" brine water</u>				Indicate deepest formation containing fresh water <u>3 1900'</u>	

## NAME AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

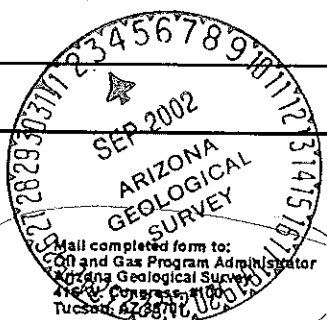
Use reverse side for additional detail.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Drilling Engineer of the Brammer Engineering Co. (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date

8-6-02

Signature

James A. BrummerPermit No. 911

Form No. 10

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

Plugging Record

File One Copy

TEMPORARY ABANDONMENT<sup>2/96</sup>



## CEMENT JOB REPORT

911

CUSTOMER Brammer Engineering Inc		DATE 30-JUL-02		F.R. # 178318785		SERV. SUPV. Javier Macias	
LEASE & WELL NAME Copper-Eagle Suncor 1-19 - API 0201320028000		LOCATION Sec 19, T2N, R1W		COUNTY-PARISH-BLOCK Maricopa Arizona			
DISTRICT Santa Fe Springs		DRILLING CONTRACTOR RIG # Nabors 477		TYPE OF JOB Long String			
SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE		PHYSICAL SLURRY PROPERTIES			
		Stage Cementing Tool 8-5/8 - 8rd		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT <sup>3</sup>	WATER GPS
							PUMP TIME HR:MIN
							BBB SLURRY
							BBB MIX WATER
MATERIALS FURNISHED BY BJ							
Fresh Water					8.34		10
Premium Lite High Strength FM				385	12.5	2.22	109.34
FRESH WATER					8.3		10
PREMIUM LITE STRENGTH FM				938	12.5	2.22	285.13
TYPE III + ADDITIVES				204	14.5	1.44	33.80
DISPLACEMENT					8.3		543.92
TYPE III + ADDITIVES				146	14.5	1.44	24.05
Available Mix Water 1100 bbl.		Available Displ. Fluid 1100 bbl.		TOTAL		1176.92 432.31	
HOLE		T8G-CSG-D.P.				COLLAR DEPTHS	
SIZE	% EXCESS	DEPTH	SIZE	WGT.	TYPE	DEPTH	GRADE
12.25		7470	9.625	43.5	CSG	7483	J-55
			9.625	40	CSG	1220	K-55
LAST CASING		PKR-CMT RET-BR PL-LINER		PERF. DEPTH		TOP CONN	
SIZE	WGT	TYPE	DEPTH	BRAND & TYPE	DEPTH	TOP	BTM
13.375	54.5		2100				
						WELL FLUID	
						BRINE 8.43	
DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBO PSI
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SG. PSI	RATED
933	BBLS	DISPLACE	8.3	2180	0	0	0
		DISPLACE	8.3				2500
						MAX CSG PSI	
						Operator	
						RATED	
						Operator	
						MIX WATER SOURCE	
						RIG	

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL					EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	BM. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input type="checkbox"/>
	PIPE	ANNULUS				TEST LINES 3500 PSI
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input type="checkbox"/>
09:30						7/30/02 ON LOC RIG UP.
02:30						7/31/02 STAGE 1 SAFETY MEETING.
03:15	3000	0	0	0 H2O		TEST LINES 3000psi.
03:25						SET TOOL
03:30	250	0	5.4	10 H2O		WATER AHEAD.
03:38	280	0	7.2	153 SLURRY		PUMP LEAD CEMENT @ 12.5ppg. 387 SACKS
04:10	190	0	5.6	52 SLURRY		PUMP TAIL CEMENT @ 14.5ppg. 204 SACKS
04:13						DROP PLUG
04:14	370	0	10	559 BRINE/MUD		DISPLACE. 185bbl BRINE & 374bbl MUD.
						CEMENT RETURN 12bbl.
05:40	2500					BUMP PLUG
08:15						OPEN TOOL / WAITING ON CEMENT.
10:00						2ND STAGE SAFETY MEETING
10:50	3500	0		H2O		TEST LINES @ 3500psi.
11:00	160	0	5.5	10 H2O		WATER AHEAD.
11:10	200	0	8.2	371 SLURRY		PUMP LEAD CEMENT @ 12.5. 938 SACKS
12:05	270	0	7.2	37.4 SLURRY		PUMP TAIL @ 14.5ppg. 146 SACKS
12:15						DROP PLUG
12:17	190	0	8.7	384 BRINE		DISPLACE
01:05	2500	0				BUMP PLUG CEMENT RETURN 30bbl.

8-5-02

Call Curt Brechtel

David Hayden & Simon - going over results = tight.

6-point step rate test

Started @ 2 bpm & finished @ 28 bpm ~ 4000 bbls of brine

Pressures similar to those seen @ 1-24

700 gpm & 750# 850 gpm & similar pressure

Got fluid production test - packer & coiled tubing

jetted hole w/ 500 scf/min N<sub>2</sub>

Recovered well bore fluid, mud filtrate, followed by  
clean formation fluid.

9# 75,000 to 78,000 ppm brine wth.

took sample every 15 min until no change  
flowed @ rate of 200 bph (~ 4800 bpd)

---

Met with ADEQ today.

Barry Rechterovich 602-771-4789

= Call Barry & I've msg about discussing requirements.



7-29-02 Kermet Lomadiet, Brauner Engrs  
will be logging  $9\frac{5}{8}$ " hole tonight  
Run CSS in morning

7-30-02 Called Kermet 602-684-4796  
logged  $9\frac{5}{8}$ " hole to 7465' (caliper for cut)  
will run CSS today  
will fax cut job report.

8-1-02 Curt Brechtel  
Called regarding 1-12 Kakerlee location  
Regarding 1-19 Suncot:  
Just finished cementing  $9\frac{5}{8}$ " CSS  
Logs suggest Volcanics below salt fractured  
+ more p+p than previous hole. (1-24)  
1st goal is to get good sample of fluid  
from zone  
2nd goal to do limited injection testing  
up to the fracture pressure.

---

Principle is recirculating an aquifer.  
i.e. injecting brine into a zone containing  
brine.

8-5-02 Getting ready to set CIRP w/ 50' cut in  $9\frac{5}{8}$ "  
Plan to set Conductor pipe at 1-12 Kakerlee Thurs.  
Receive washed + Dry Samples via hot shot

7-15-02 Charles Tucker called  
@ 7522' & making a bit trip.  
Base of salt @ ~7480'  
Volcanic flows below salt.  
Haven't lost any mud - still salt mud  
Have 6200' CSS coming in  
Plan is to drill ~200' into basement  
Switching out w/ Kermet Thursday.

7-22-02 Kermet Lonadier  
TD @ 8307'  
~100' in bsmt - top @ ~8202'  
Very hard-bit in bad shape  
Only got 14 hrs on 56 hr bit  
Set  $9\frac{5}{8}$ " at 7470' - more pipe on order  
will take ~3 days to open hole  
Dave Hayden was out fir loss.  
looked promising between salt & bsmt.  
Plan on open-hole basket below  $9\frac{5}{8}$ "  
DV tool ~4000' or lower

7-25-02 Matt Reid  
Hope to start limited injection testing on Sunday  
Cuttings indicate zone looks good if so...  
Move over to the 1-12 Kakerlee  
Most likely will not re-enter 1-24 at this time



# CEMENT JOB REPORT

file 911

CUSTOMER Brammer Engineering Inc		DATE 07-JUL-02	F.R. # 258120422		SERV. SUPV. Christopher Koebelin						
LEASE & WELL NAME Copper- Eagle Suncor 1-19 - API 0020132002800		LOCATION Sec 19, T2N, R1W			COUNTY-PARISH-BLOCK Maricopa Arizona						
DISTRICT Santa Fe Springs		DRILLING CONTRACTOR RIG # Nabors 477			TYPE OF JOB Surface						
SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE		PHYSICAL SLURRY PROPERTIES							
Cement Plug, Rubber, Top 13-3/8 in		Guide Shoe, Cement Nose 13-3/8 in		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT <sup>3</sup>	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER	
		Float Collar, Al Flap, 13-3/8 - 8rd									
MATERIALS FURNISHED BY BJ											
Premium Lite				810	12.5	2.02	11.01	04:50	291.4	212.33	
Type III				600	14.5	1.45	6.96	02:00	154.9	99.40	
Available Mix Water 500 Bbl.				Available Displ. Fluid 550 Bbl.		TOTAL		446.3	311.73		
HOLE			TBG-CSG-D.P.				COLLAR DEPTHS				
SIZE	% EXCESS	DEPTH	SIZE	WGT.	TYPE	DEPTH	GRADE	SHOE	FLOAT	STAGE	
16	15	2106	13.375	54.5	CSG	2121	J-55	2121	2073	630	
LAST CASING			PKR-CMT RET-BR PL-LINER			PERF. DEPTH		TOP CONN		WELL FLUID	
SIZE	WGT	TYPE	DEPTH	BRAND & TYPE		DEPTH	TOP	BTM	SIZE	THREAD	TYPE
									13.325	8RD	BRINE
DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER SOURCE
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	
417.6	BBLs			340	0	0	0	0	2730	2100	400 BBL TANK
EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:											
PRESSURE/RATE DETAIL						EXPLANATION					
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>					
	PIPE	ANNULUS				TEST LINES 2500 PSI					
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input type="checkbox"/>					
17:00						ON LOCATION RIG UP					
18:00						SAFETY MEETING					
20:05						TEST LINES					
00:00						15 % Excess Off Logs/ Dif. PSI 340					
20:15	220		6	60	FLUSH	PUMP WATER/MUD CLEAN/WATER					
20:40	320		5.5	165.5	CEMENT	PUMP LEAD SLURRY@ 12.5					
21:15	370		4	77	CEMENT	PUMP TAIL SLURRY@14.5					
21:35	0		0			DROP PLUG					
22:00	300		6	320.5	BRINE/MUD	DISPLACE TO FLOAT COLLAR					
22:55						CIP FIRST STAGE/ ( 5 Bbls. Returns)					
00:00						15% Excess Off Logs/ Dif. PSI 200					
02:30	260		6	40	FLUSH	PUMP WATER/MUD CLEAN/WATER					
02:45	150		5.5	79	CEMENT	PUMP LEAD SLURRY@ 12.5					
03:00	220		4	39	CEMENT	PUMP TAIL SLURRY@ 14.5					
03:15	0		0			DROP PLUG					
03:30	230		6	98	WATER	DISPLACE TO DV COLLAR					
03:50	900		0			BUMP PLUG CIP( 35 Bbls. Returns)					
BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERV. SUPV.				
<input checked="" type="checkbox"/> Y	N	900	<input checked="" type="checkbox"/> Y	N	40	879	0	Y	<input checked="" type="checkbox"/> N		

6-25-02 Jim Lingaletter

Rigging up tomorrow on 1-19

Spud as early as Sunday or Monday.

Reasoning behind 100' radius?

Heating only on purposefully deviated hole.

not applicable for holes that drift. (Htgs)

7-1-02 Kermit @ Braumet Engrs

Looks like they'll spud tomorrow night  
1st CSS point @ ~2000'

7-5-02 Charles Tucker @ Braumet Engrs

Going to log this afternoon.

Set surface pipe to 2106' ~200' in salt

2-stage cement job to start in morning.

DV tool at ~600'

9500/day for rig + fuel

CSS crew 4,000 - 16,000 w/ standby + labor



## PERMIT TO DRILL

This constitutes the permission and authority from the

OIL AND GAS CONSERVATION COMMISSION,  
STATE OF ARIZONA,

To: COPPER EAGLE GAS STORAGE LLC  
(OPERATOR)

to drill a well to be known as

#1-19 SUNCOR STRATIGRAPHIC TEST  
(WELL NAME)

located 330' FNL & 1130' FEL

Section 19 Township 2N Range 1W, MARICOPA County, Arizona.

The N/A of said  
Section, Township and Range is dedicated to this well.

Said well is to be drilled substantially as outlined in the attached Application and must be drilled  
in full compliance with all applicable laws, statutes, rules and regulations of the State of Arizona.

Issued this 6 day of JUNE, 19 2002.

OIL AND GAS CONSERVATION COMMISSION

By Stephene R. Rains

EXECUTIVE DIRECTOR  
OIL & GAS ADMINISTRATOR

PERMIT 00011

RECEIPT NO. 3115

A.P.I. NO. 02-013-20028

State of Arizona  
Oil & Gas Conservation Commission  
Permit to Drill

FORM NO. 27

# APPLICATION FOR PERMIT TO DRILL OR RE-ENTER

APPLICATION TO DRILL ☒

RE-ENTER OLD WELL ☐

NAME OF COMPANY OR OPERATOR

COPPER EAGLE GAS STORAGE, LLC

Address

City

State

Phone Number

500 N. 5th STREET

PHOENIX

AZ

(602) 250 3109

Drilling Contractor

NABORS DRILLING USA INCORPORATED

Address 3919 ROSEDALE HWY., BAKERSFIELD, CA 93308

## DESCRIPTION OF WELL AND LEASE

Federal, State or Indian Lease Number, or fee lease, name of lessor

SUN COR DEVELOPMENT CO.

Well number

#1-19

Elevation (ground)

1053.1'

Nearest distance from proposed location to property or lease line:

330 feet

Distance from proposed location to nearest drilling, completed or applied for well on the same lease:

N/A

feet

Number of acres in lease

N/A

Number of wells on lease, including this well, completed in or drilling to this reservoir:

1

If lease purchased with one or more wells drilled, from whom purchased:

N/A

Name

Address

Well location (give footage from section lines)

1130' FEL & 330' FNL

Section - township - range or block and survey

SEC 19 - T2N - R1W

Dedication [A.A.C. R12-7-104(A)(3)]

N/A

Field and reservoir (if wildcat, so state)

STRATIGRAPHIC TEST

County

MARICOPA

Distance in miles and direction from nearest town or post office

Proposed depth:

9,000 FEET

Rotary or cable tools

ROTARY

Approximate date work will start

6/15/02

Bond status ATTACHED

Organization Report

Filing Fee of \$25.00

Amount \$10,000.00

On file XX Or attached

Attached XX

Remarks

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the GENERAL MANAGER of the COPPER EAGLE GAS STORAGE LLC (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

API # 02-013-20028

Matthew J. Reel

Signature

June 6, 2002

Date

Mail completed form to:  
Oil and Gas Program Administrator  
Arizona Geological Survey  
418 W. Congress, #100  
Tucson, AZ 85701-1315

Permit Number: 911

Approval Date: 6-6-02

Approved By: SL Rainey

**STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION**

Application to Drill or Re-enter  
File Two Copies

NOTICE: Before sending in this form be sure that you have given all information requested. Much unnecessary correspondence will thus be avoided.

Form No. 3

- Operator shall outline on the plat the acreage dedicated to the well in compliance with A.A.C. R12-1-101.  
*THIS IS A STRATIGRAPHIC TEST AND EXEMPT FROM THE SPACING RULES PER R12-7-128.*
- A registered surveyor shall show on the plat the location of the well and certify this information in the space provided.
- ALL DISTANCES SHOWN ON THE PLAT MUST BE FROM THE OUTER BOUNDARIES OF THE SECTION.
- Is the operator the only owner in the dedicated acreage outlined on the plat below? YES X NO \_\_\_\_\_  
*SUNCOR IS THE OWNER OF THE PROPERTY AND A MEMBER OF THE COPPER EAGLE GAS STORAGE, LLC.*
- If the answer to question four is "no", have the interests of all owners been consolidated by communization agreement or otherwise?  
YES \_\_\_\_\_ NO \_\_\_\_\_ If answer is "yes", give type of consolidation \_\_\_\_\_
- If the answer to question four is "no", list all the owners and their respective interests below:

Owner <i>SUNCOR DEVELOPMENT COMPANY</i>	Land Description <i>AGRICULTURAL / SUNCOR FEE PROPERTY</i>
--	---

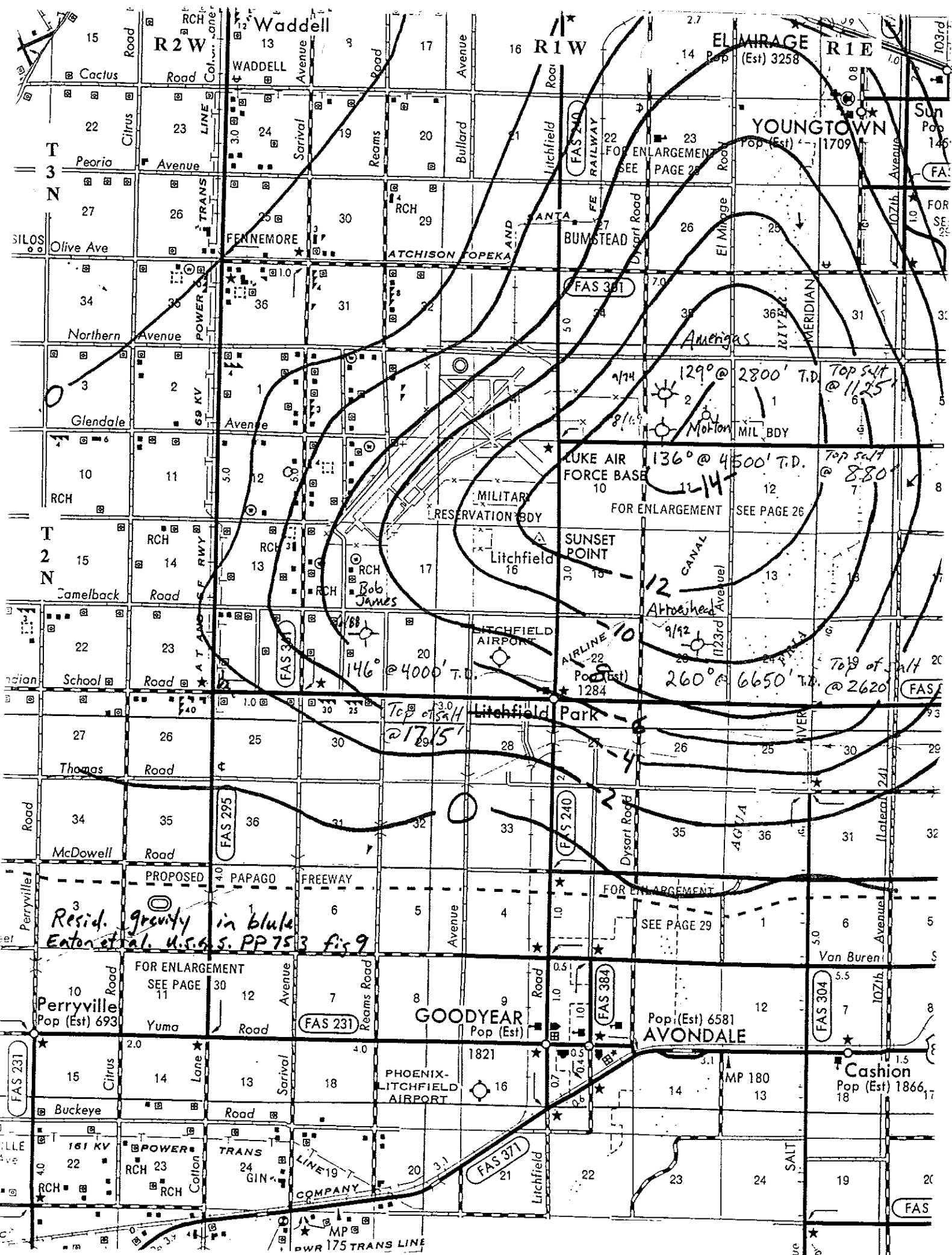
	<div style="text-align: center;"> <b>CERTIFICATION</b> </div> <p>I hereby certify that the information above is true and complete to the best of my knowledge and belief.</p> <p style="text-align: center;"><i>Matt Reid</i></p> <div style="border: 1px solid black; padding: 2px;">             Name  <i>MATT REID</i> </div> <div style="border: 1px solid black; padding: 2px;">             Position  <i>GENERAL MANAGER</i> </div> <div style="border: 1px solid black; padding: 2px;">             Company  <i>COPPER EAGLE GAS STORAGE, LLC</i> </div> <div style="border: 1px solid black; padding: 2px;">             Date  <i>June 6, 2002</i> </div> <div style="text-align: center; margin-top: 20px;"> </div> <p>I hereby certify that the information shown on the plat is plotted from the notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.</p> <p style="text-align: center;"><i>Michael D. Braden</i></p> <div style="border: 1px solid black; padding: 2px;">             Date Surveyed  <i>May 2002</i> </div> <div style="border: 1px solid black; padding: 2px;">             Registered Land Surveyor  <i>Michael D. Braden</i> </div> <div style="border: 1px solid black; padding: 2px;">             Certificate No.  <i>LS-16292</i> </div>
--	--

0 330 660 990 1320 1650 1980 2310 2640	2000 1500 1000 500 0	
--	----------------------	--

**PROPOSED CASING PROGRAM**

Size of Casing	Weight	Grade & Type	Top	Bottom	Cementing Depths	Sacks Cement	Type
20"	78.8	LP ERW	0'	60'	0 - 60'	Redi-Mix	---
13 3/8"	68.0	K55 HC	0'	2000'	0 - 2000'	705 SKS	PREM.
9 5/8"	43.5	P110 LT#C	0'	5650'	0 - 5650'	1141 SKS	PREM.







DRILLING PROGRAM

911

COPPER EAGLE GAS STORAGE, LLC  
SUNCOR DEVELOPMENT # 1-19  
STRATIGRAPHIC TEST WELL

MARICOPA COUNTY, ARIZONA  
*ne ne* SEC 19 – T2N – R1W

PREPARED BY: JIM LINGAFELTER

05/31/02

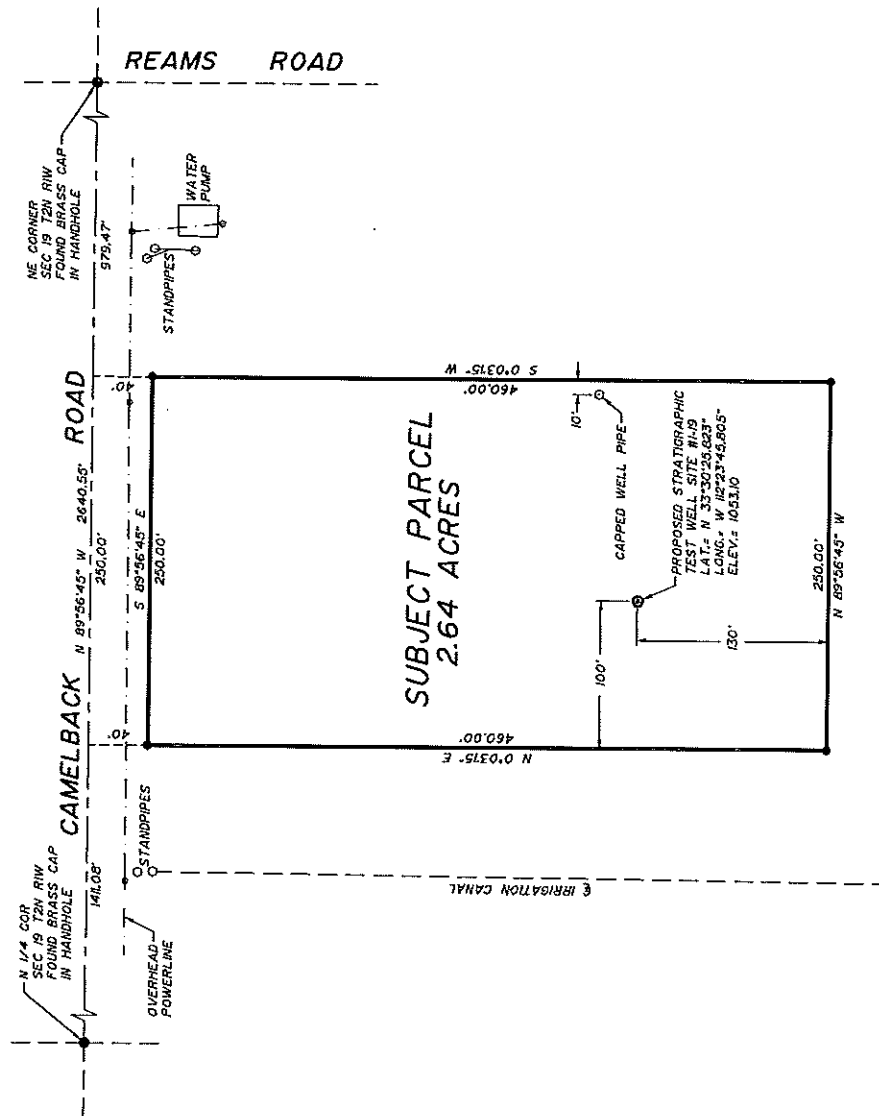
BRAMMER ENGINEERING, INC.  
333 TEXAS STREET, SUITE 1425  
SHREVEPORT, LA 71101-5323  
(318) 429-2345

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Mud Specifications	10
Bit Specifications	11
Logging Specifications	12
Casing Specifications	13
Cement Specifications	14

# RESULTS OF SURVEY

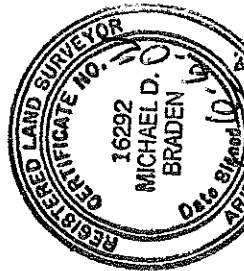
A PORTION OF THE NE 1/4 OF SECTION 19,  
TOWNSHIP 2 NORTH, RANGE 1 WEST,  
OF THE GILA AND SALT RIVER MERIDIAN  
MARICOPA COUNTY, ARIZONA



SCALE 1" = 130'

## CERTIFICATION

MICHAEL D. BRADEN, BEING DULY SWORN, THAT HE IS A REGISTERED LAND SURVEYOR, THAT THIS SURVEY WAS MADE UNDER HIS SUPERVISION DURING THE MONTH OF MAY 2002, AS SHOWN AND DESCRIBED ON THIS MAP, AND THAT THIS MAP WAS PREPARED UNDER HIS DIRECTION.



*Michael D. Braden*  
MICHAEL D. BRADEN  
Date Signed 10/1/02  
ARIZONA U.S.A.

MICHAEL D. BRADEN  
ALLS. NO. 16292

• DENOTES SET 5/8" REBAR WITH CAP

ARIZONA PUBLIC SERVICE COMPANY  
PHOENIX, ARIZONA

## RESULTS OF SURVEY AMENDED

NE 1/4 SEC. 19, T.2 N., R.1 W.,  
GILA AND SALT RIVER MERIDIAN  
MARICOPA COUNTY, ARIZONA

CREW SUTTON-POLLOCK  
DATE 06-06-02 SCALE 1" = 130'  
DRAWN BY D.J.A. W.A. 75-1070-00042

MAP #02-10412

**WELL INFORMATION**  
**OVERVIEW**

<b>Operator:</b>	Copper Eagle Gas Storage, LLC	<b>Proposed TD:</b>	+/- 9000'
<b>Well Name:</b>	SunCor Development # 1-19		
<b>Field:</b>	Stratigraphic Test	<b>Serial No:</b>	
<b>Co/Ph, State:</b>	Maricopa County, Arizona	<b>Elevations:</b>	
<b>Surface Loc:</b>	Sec. 19-T2N-R1W		
<b>BHL:</b>	Same, Vertical Hole	<b>Estimated Days:</b>	
<b>Objectives:</b>	Clastic-Valley Fill Stratigraphic Test	<b>Surface:</b>	
		<b>Production Hole:</b>	
		<b>Total to TD:</b>	

**Location Contractor:** D&D

**Drilling Contractor:** Nabors Drilling USA

**Contract Type:** IADC Daywork

**Conservation Agent:** Steven L. Rauzi, Oil and Gas Program Administrator, Arizona Geological Survey. 416 W Congress, Suite 100, Tucson, Arizona 85701, 520-770-3500

**NOTIFY AT SPUD, SETTING CASING, TESTING BOP'S AND P&A. Give 48-hrs notice.**

**Directions to Well:** I-10 West of Phoenix, AZ to exit 124. Go north to Camelback Road turn left and go approx. 0.5 miles to Reams Road. Cross Reams Road, go approx. 0.25 miles and location is on the left.

**WELL INFORMATION**  
**OVERVIEW (Cont'd.)**

Hole Section (Meas. Depth)	Hole Size	Casing	Cement	Mud
0 to 60'	30"	20" X 0.375"	Grouted to surface	
0 to 2,000'	16"	13-3/8", 68#/ft, K-55 HC, ERW, BTC	Premium Lite High Strength FM + 5% bwow NaCl 12.5 ppg; 2.06 cf/sk; 11.01 gps water  <u>Top out slurry: Type III</u>	8.4 – 9.0 ppg 32-45 sec/qt
2,000' to 5,650'	12-1/4"	9-5/8", 43.5#/ft, HC, P-110, LT&C	<u>Stage 1:</u> Premium Lite High Strength FM Plus 15.3% bwow NaCl + 0.5% bwoc FL-25 + 0.3% bwoc R-3 + 0.25 lbs/sk cello flake 12.50 ppg; 2.30 cf/sk; 12.26 gps water  <u>Stage 2:</u> Premium Lite High Strength FM Plus 0.5% bwoc FL-25 + 0.25 lbs/sk cello flake 12.50 ppg; 1.96 cf/sk; 10.42 gps water	9.2-10.3 32-45 sec/qt
5,650' to 9,000'	7-7/8"	none	none	9.2-10.3 32-45 sec/qt

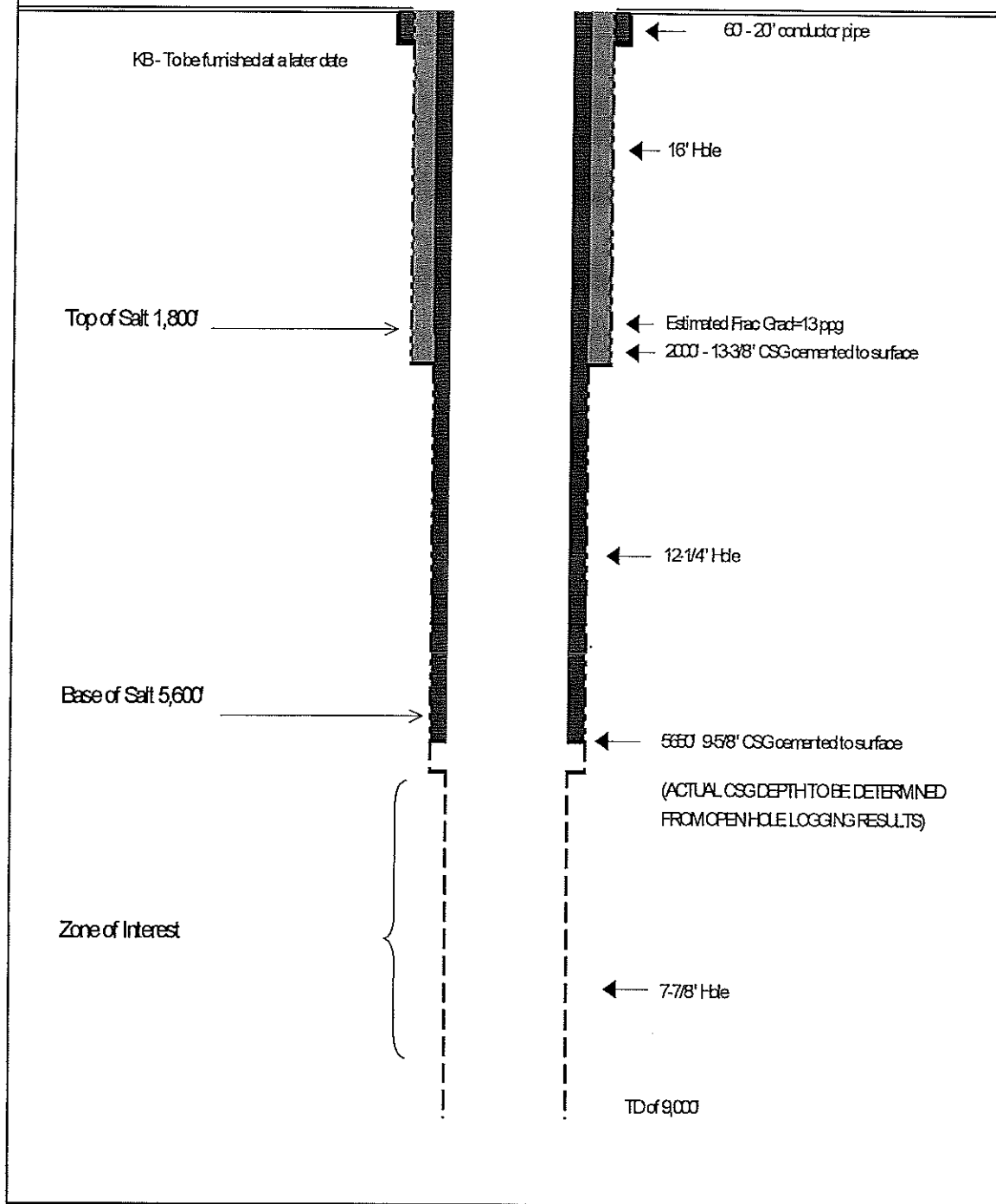
Formation	Estimated Top - TVD
Clastic and Valley Fill Sediments	0' to 1800'
Luke Basin Salt	1800' to 5600'
Clastic and Valley Fill Sediments	5600' to TD

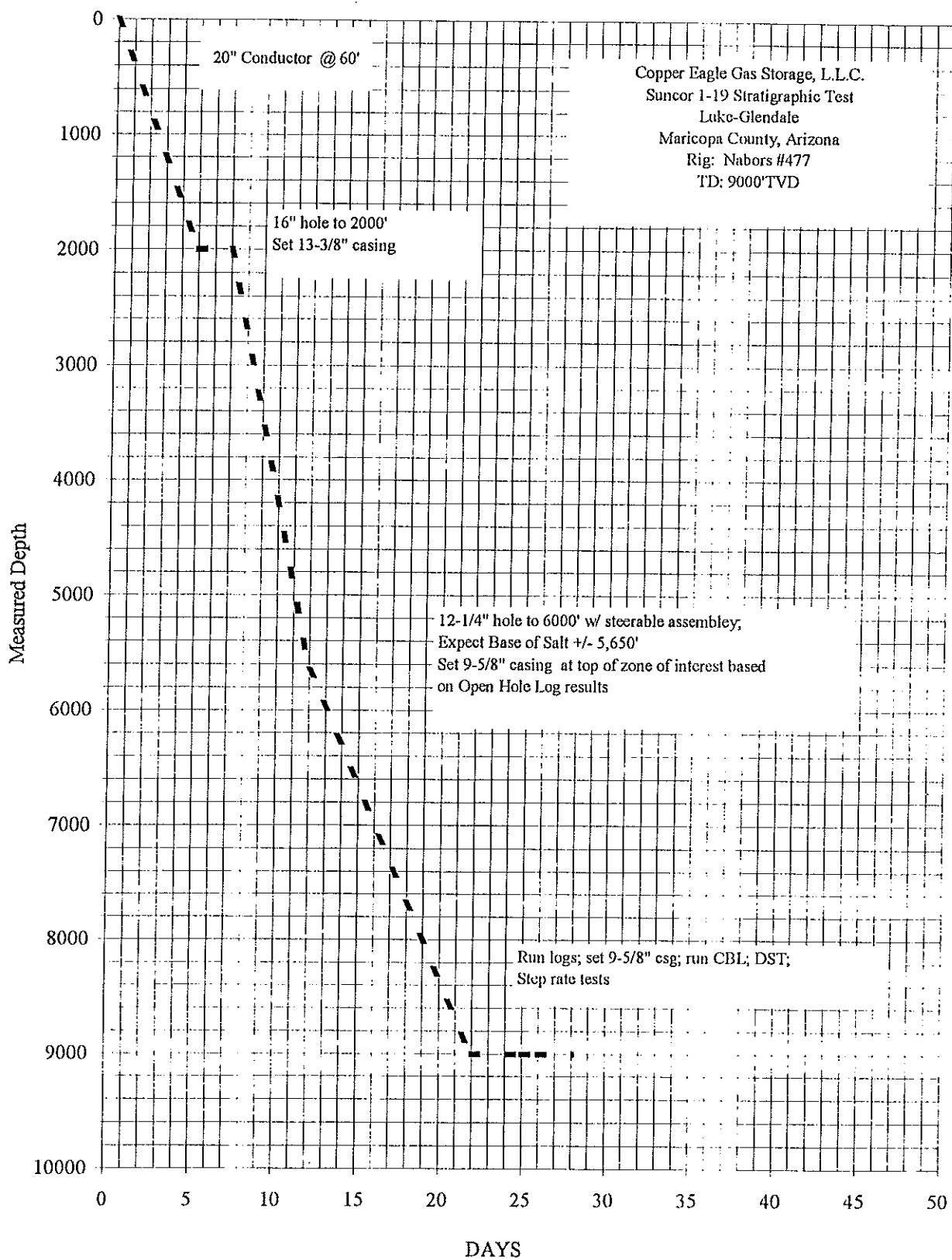
**INVOICES:** All equipment and services should be billed to: Brammer Engineering, Inc.  
333 Texas Street, Suite 1425  
Shreveport, La 71101-5323

**Rig Phone:** Co. Representative Charles Tucker & Kermet Lonadier  
Mud Logger Epoch Well Services

Copper Eagle Gas Storage, LLC  
SunCor # 1-19  
Maricopa County, Arizona  
Luke-Grandale Field

WELLBORE SCHEMATIC







## CHRONOLOGICAL PROGNOSIS

NOTE: See Details and Specifications Section for Additional Information and Instructions!

1. Drill Rat Hole, Set 60' of 20" conductor pipe
2. Move in and RU Nabors Drilling USA Rig # 477.
3. Drill 16" hole to 2000' or 200' into the salt or a major chloride increase.

**NOTE: THIS WELL WILL BE DRILLED VERY NEAR FRESH WATER WELLS AND IT IS IMPERATIVE THAT ALL MEASURES ARE TAKEN TO INSURE THAT THE FRESH WATER ZONES ARE NOT IMPACTED BY DRILLING FLUIDS.**

NOTE: There may be a 200' to 400' Anhydrite cap above the top of salt.

Expect top of salt at +/- 1800'

4. Circ and condition hole to run electric logs and run all electric logs.
5. Run 13-3/8" surface casing to 2,000' and cement to surface. WOC 12 hrs before cutting pipe.
6. NU 13-5/8" 3000# X 13-3/8" SOW casing head. NU 13-5/8" 5000 psi BOP's. Test rams and valves to 250-psi/3000 psi. Test annular to 250-psi/3000 psi.
7. Install wear bushing in casing head before drilling out surface casing.
8. PU 12-1/4" bit and BHA. Test casing to 1000 psi. Drill FC and 20' of cement. Retest casing. Drill shoe and 5' of formation. Test casing shoe to leak off or not to exceed 12 ppg EMW. Squeeze and retest if necessary.
9. Change over to salt-saturated mud system and drill to 6,000'. POH and pick up 7-7/8" bit and drill to 9000' or approx. 200' into Basement. Use magnetic single shot to keep hole straight.
10. Circ and condition hole to run electric logs, **including CBL on surface casing.**
11. POOH and Run 9-5/8" casing to depth as determined from open hole logs in Step 10 above (expect depth to be +/- 5,650') and cement to surface. WOC 12 hrs before cutting pipe
12. NU 13-5/8" 3000# X 11" 5000# casing head. NU 13-5/8" 5000 psi BOP's. Test rams and valves to 250psi/3000psi. Test annular to 250psi/5000psi.
13. Drill out float equipment; clean hole to TD with 7-7/8" bit. Circ. w/ 10# brine; POOH
14. **Run CBL log on Production casing**
15. Run 4-1/2" Drill pipe with Baker packer and set packer at +/- 5550. NU up Manifold.
16. RU Cudd Coiled tubing. TIH using Nitrogen to recover clean formation fluids. **Continue to jet hole till adequate clean formation fluids are recovered**
17. RU to inject filtered brine into open hole according to injection test procedure. Record all pressures and rates.
18. Release Packer and TOH. LD Packer
19. Plug well per Arizona Oil and Gas rules.
20. Lay down drill pipe and rig down and release rig.

## DRILLING SPECIFICATIONS

### GENERAL INSTRUCTIONS:

1. Run appropriate BHA. Discuss with operations supervisor.
2. Two TIW and one inside Gray BOP safety valves of appropriate sizes to be in open position on rig floor at all times.
3. Inspect, measure, and caliper all subsurface drilling tools prior to running in hole.
4. Design drill strings for 100,000# over pull and ensure that recommended torque values along with proper makeup procedures are used.
5. Minimize casing wear by using smooth hard band or non-hard banded drill strings inside casing. Use DP rubbers (one every other joint) inside all casing strings.
6. Optimize hydraulics.
7. One of the objectives of this test is to detect and record the depths of all shallow fresh water zones which may require drilling surface slightly underbalanced.
8. Record slow pump pressures and rates each tower.
9. Insure that safety meetings are conducted daily with each crew.
10. All drill collars to be counterbored and stress relieved.

### **BOP REQUIREMENTS**

Hole Size	Number	Size	WP (psig)	Test Pressure (psig)	Configuration
16"	None Req.				
12-1/4 & 7-7/8"	1 - Ann 2 - Ram	13 5/8"	5000 5000	250/3000 250/5000	Annular-Pipe-Blind

#### Instructions:

1. Test BOP's to above pressure when installed (with 3rd party) and every 28 days there after. Note all tests on IADC tower report.
2. Work rams on all trips. Record on morning report and IADC tower report.
3. Ensure that accumulator/closing units are checked daily.
4. Conduct BOP drills once per week with each crew as appropriate.

## DEVIATION SURVEYS

Run Deviation Survey at 100' intervals, or as needed to keep hole straight as per AZ O&G R12-7-115 (deviation not to exceed 100' from offset from surface).

### MUD SPECIFICATIONS

Controlled by Operator. Use Inteq Drilling Fluids for mud & chemicals.  
Maintain mud parameters as follows:

DEPTH (MD)	WEIGHT	VIS	W.L.	PV	Y.P.
0' - 1850' (Fresh)	8.4 - 9.0	32 - 45	8 - 12	NC	20 - 25
1850' - 5650' (Salt)	10.0 - 10.1	32 - 45	8 - 12	8 - 10	8 - 12
5,650' - 9000' (Salt)	10.0 - 10.1	32 - 45	8 - 10	8 - 10	10 - 14

**VERY IMPORTANT TO CLOSELY MONITOR FLUID VOLUMES AND LOSSES**

## BIT SPECIFICATIONS

### RECOMMENDED BIT PROGRAM:

No.	SIZE	IADC CODE	DEPTH OUT	WOB	RPM
1	16"	117	2000'	40/50	80/100
SET 13-3/8" CASING AT +/- 2000'					
2	12-1/4"	BD535	5650'	2/15	200/240
3	7-7/8"	GTX20	6300'	20/35	200/240
4	7-7/8"	GTX20	7000'	20/35	200/240
5	7-7/8"	GTX20	7500'	20/35	200/240
6	7-7/8"	GTX20	8000'	20/35	200/240
7	7-7/8"	SX40	8500'	20/35	200/240
8	7-7/8"	SX40	9000'	20/35	200/240
SET 9-5/8" CASING AT DEPTH DETERMINED FROM OPEN HOLE LOGGING (EST. +/- 5650')					

Note: Drilling hrs do not include coring time.

## LOGGING SPECIFICATIONS

**CUTTINGS:** Every 10' from surface to TD

**Samples of all cuttings must be supplied to the AZ Oil and Gas Commission WITHIN 10 DAYS of completion of drilling**

**MUD LOGGER:** Epoch—From Spud to TD

**DRILLSTEM TEST:** Schlumberger

**CORES:** 3-1/2" 60' Full cores as needed

**ELECTRIC LOGGING:**

At 2000' or surface csg pt.

Lateralog/Neutron/Density/Dipole Sonic from TD to base of Conductor casing;

At 9000' or TD to Surface csg

Lateralog/Neutron/Density/Dipole Sonic (obtain Shear wave data)/FMI (from TD to top of injection interval)/ CBL on surface casing

NOTE: Need to discuss possible Spectrometer as well.

After running protection csg.

CBL

## CASING SPECIFICATIONS

### **CONDUCTOR PIPE:** (0' to 60')

20" x 0.375" Wall Grade B Line Pipe

### **SURFACE CASING:** (0' TO 2000')

13-3/8" 68.00 #/ft K-55, HC, ERW, BTC (New, API, Prime)

### **PRODUCTION CASING:** (0' to 5650')

9-5/8" 43.5 #/ft HC P-110 LTC (New, API, Prime)

#### Running Instructions:

1. Visually inspect, strap, and number each joint. Compare strap to delivery ticket.
2. Remove thread protectors and clean threads if necessary.
3. Run float shoe and float collar one joint above shoe. Weld float shoe and float collar.
4. Run centralizers 5' above shoe, at float collar, at 1st collar above float collar, and at every other collar to surface.
5. Torque to API recommended values.
6. Use API-HP thread lubricant.
7. Tag bottom and check measurements. Pick up off bottom and circulate at least 1 1/2 casing volumes or two bottoms up minimum prior to cementing.
8. Reciprocate casing while circulating and cementing.
9. Hang string in full tension.
11. If needed use 150 sx top out job with fresh water cement

**NOTE: Do not drill out or test casing for 24 hr minimum after cementing.**

#### Testing Instructions:

1. Clean out casing with 7-7/8" bit to float collar.
2. Test casing to 1000 psi for 30 minutes.
3. Drill FC plus 20' of cement and retest casing to 1000 psi.
4. Drill out rest of shoe joint plus 5' of formation.
5. Circ hole clean and test shoe to 13 ppg EMW. If shoe fails to test, squeeze and retest.



## CEMENT SPECIFICATIONS

### **SURFACE CASING:**

Casing Size:	13-3/8"	Mud Weight:	9.0 ppg
Hole Size:	16"	Fillup:	Surface
Depth:	2000'	Excess:	Caliper plus 15%
Stage Collar:	600'		

### Recommended Cement:

#### Cement Slurry:

Stage 1:                    348 sks Premium Lite High Strength FM + 5% bwow Sodium Chloride  
                                 12.50 ppg            2.06 cf/sk            11.01 gps water

                                 100 sks Type III cement  
                                 14.5 ppg            1.45 cf/sk            6.96 gps water

Stage 2:                    157 sks Premium Lite High Strength FM + 5% bwow Sodium Chloride  
                                 12.50 ppg            2.06 cf/sk            11.01 gps water

                                 100 sks Type III cement  
                                 14.5 ppg            1.45 cf/sk            6.96 gps water

#### Instructions:

1. Reciprocate casing while circulating and cementing
2. Bump plug with 500 psi over circulating pressure.
3. Perform top job using 1" pipe, if necessary.
4. Hold casing in full tension until initial cement set up.
5. WOC 12 hrs before cutting csg.
6. WOC 24 hrs before drilling out.

## CEMENT SPECIFICATIONS (cont'd.)

### PROTECTION CASING:

Casing Size: 9-5/8"      Mud Weight: 9.5 ppg  
Hole Size: 12-1/4"      Fillup: Surface  
Depth: 5650'      Excess: Caliper plus 15%  
Stage Collar: 4000'  
Davis Lynch 7' Seal Assembly Packer/Stage Collar @ 5650'

#### Recommended Cement:

##### Stage 1:

Lead Slurry: 250 sacks Premium Lite High Strength FM + 15.3% bwow Sodium Chloride +  
0.5% bwoc FL-25 + 0.3% bwoc R-3 + 0.25 lbs/sk cello flake  
12.50 ppg      2.30 cf/sack      12.26 gps

Tail Slurry: 100 sacks Type III + 0.5% bwoc FL-25  
14.5 ppg      1.39 cf/sack      6.81 gps

##### Stage 2:

Lead Slurry: 667 sacks Premium Lite High Strength FM + 0.5% bwoc FL-25 + 0.25 lbs/sk  
cello Flake  
12.50 ppg      1.96 cf/sack      10.42 gps

Tail Slurry: 124 sacks Type III + 0.5% bwoc FL-25  
14.5 ppg      1.39 cf/sack      6.81 gps

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

Bond Serial No. 104154344

Duplicate Original Bond

That we: Copper Eagle Gas Storage LLC

of the County of El Paso in the State of Colorado

as principal, and Travelers Casualty and Surety Company of America

of One Tower Square, Hartford, CT 06183-6014

AUTHORIZED TO DO BUSINESS WITHIN THE STATE OF ARIZONA

as surety, are held and firmly bound unto the State of Arizona and the Oil and Gas Conservation Commission, hereinafter referred to as the "Commission", in the penal sum of Twenty Five Thousand Dollars and 00/100, (\$25,000.00\*\*\*\*) lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are that, whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to-wit:

Suncor #1-19 Stratigraphic Test, Suncor #1-24 Stratigraphic Test, Kackerlee #1-12 Stratigraphic Test

(May be used as blanket bond or for single well)

NOW THEREFORE, if the above bounden principal shall comply with all the provisions of the Laws of this State and the rules, regulations and orders of the Commission, especially with reference to the requirements of A.R.S. § 27-516, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil and Gas Conservation Commission all notices and records required by said Commission, then in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantities, this obligation is void; otherwise it shall remain in full force and effect.

Whenever the principal shall be, and declared by the Oil and Gas Conservation Commission in violation of the Laws of this State and the rules, regulations and orders of the Commission, the surety shall promptly:

1. Remedy the violation by its own efforts, or
2. Obtain a bid or bids for submission to the Commission to remedy the violation, and upon determination by the Commission and the surety of the lowest responsible bidder, arrange for a contract between such bidder and the Commission, and make available as work progresses sufficient funds to pay the cost of remedying the violation; but not exceeding, including other costs and damages for which the surety may be liable hereunder, the amount set forth in the first paragraph hereof.

Liability under this bond may not be terminated without written permission of this Commission.

WITNESS our hands and seals, this 1st day of September October, 20 03.

Approved

By MAM  
Legal Dept.

Patricia A. Shelton, President, El Paso Natural Gas Company, as the sole member

of Copper Eagle Gas Storage, LLC Principal

WITNESS our hands and seals, this 17th day of September, 20 03.

Travelers Casualty and Surety Company of America

Suzanne Holden, Attorney-In-fact Surety  
N/A

(Surety, Resident Arizona Agent  
If issued in a state other than Arizona)

(If the principal is a corporation, the bond should be executed by its duly authorized officers, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond.)

Approved  
Date

10-14-03

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

By:

SL Rainey

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

Bond  
File Two Copies

Form No. 2

Permit No.



**IMPORTANT DISCLOSURE NOTICE OF TERRORISM  
INSURANCE COVERAGE**

Bond No. 104154344

On November 26, 2002, President Bush signed into law the Terrorism Risk Insurance Act of 2002 (the "Act"). The Act establishes a short-term program under which the Federal Government will share in the payment of covered losses caused by certain acts of international terrorism. We are providing you with this notice to inform you of the key features of the Act, and to let you know what effect, if any, the Act will have on your premium.

Under the Act, insurers are required to provide coverage for certain losses caused by international acts of terrorism as defined in the Act. The Act further provides that the Federal Government will pay a share of such losses. Specifically, the Federal Government will pay 90% of the amount of covered losses caused by certain acts of terrorism which is in excess of Travelers' statutorily established deductible for that year. The Act also caps the amount of terrorism-related losses for which the Federal Government or an insurer can be responsible at \$100,000,000,000.00, provided that the insurer has met its deductible.

Please note that passage of the Act does not result in any change in coverage under the attached policy or bond (or the policy or bond being quoted). Please also note that no separate additional premium charge has been made for the terrorism coverage required by the Act. The premium charge that is allocable to such coverage is inseparable from and imbedded in your overall premium, and is no more than one percent of your premium.

**TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA  
TRAVELERS CASUALTY AND SURETY COMPANY  
FARMINGTON CASUALTY COMPANY  
Hartford, Connecticut 06183-9062**

**POWER OF ATTORNEY AND CERTIFICATE OF AUTHORITY OF ATTORNEY(S)-IN-FACT**

**KNOW ALL PERSONS BY THESE PRESENTS, THAT TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, TRAVELERS CASUALTY AND SURETY COMPANY and FARMINGTON CASUALTY COMPANY,** corporations duly organized under the laws of the State of Connecticut, and having their principal offices in the City of Hartford, County of Hartford, State of Connecticut, (hereinafter the "Companies") hath made, constituted and appointed, and do by these presents make, constitute and appoint: **Heidi Bockus, Jay A. Miley, Kathie L. Wieggers, Krista M. Stromberg, Patrick D. Dineen, Tevy Lor, Thomas J. Jochums, Suzanne Holden,** of Seattle, Washington, their true and lawful Attorney(s)-in-Fact, with full power and authority hereby conferred to sign, execute and acknowledge, at any place within the United States, the following instrument(s): by his/her sole signature and act, any and all bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking and any and all consents incident thereto and to bind the Companies, thereby as fully and to the same extent as if the same were signed by the duly authorized officers of the Companies, and all the acts of said Attorney(s)-in-Fact, pursuant to the authority herein given, are hereby ratified and confirmed.

This appointment is made under and by authority of the following Standing Resolutions of said Companies, which Resolutions are now in full force and effect:

VOTED: That the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her.

VOTED: That the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary.

VOTED: That any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary, or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority.

**This Power of Attorney and Certificate of Authority is signed and sealed by facsimile (mechanical or printed) under and by authority of the following Standing Resolution voted by the Boards of Directors of TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, TRAVELERS CASUALTY AND SURETY COMPANY and FARMINGTON CASUALTY COMPANY, which Resolution is now in full force and effect:**

VOTED: That the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, TRAVELERS CASUALTY AND SURETY COMPANY and FARMINGTON CASUALTY COMPANY have caused this instrument to be signed by their Senior Vice President and their corporate seals to be hereto affixed this 11th day of September, 2003.


STATE OF CONNECTICUT

}SS. Hartford

COUNTY OF HARTFORD

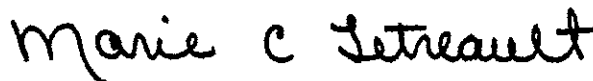
TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA  
TRAVELERS CASUALTY AND SURETY COMPANY  
FARMINGTON CASUALTY COMPANY



By   
George W. Thompson  
Senior Vice President

On this 11th day of September, 2003 before me personally came **GEORGE W. THOMPSON** to me known, who, being by me duly sworn, did depose and say: that he/she is Senior Vice President of **TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, TRAVELERS CASUALTY AND SURETY COMPANY** and **FARMINGTON CASUALTY COMPANY**, the corporations described in and which executed the above instrument; that he/she knows the seals of said corporations; that the seals affixed to the said instrument are such corporate seals; and that he/she executed the said instrument on behalf of the corporations by authority of his/her office under the Standing Resolutions thereof.



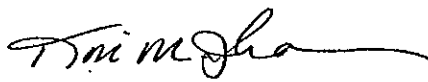
  
My commission expires June 30, 2006 Notary Public  
Marie C. Tetreault

#### CERTIFICATE

I, the undersigned, Assistant Secretary of **TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA, TRAVELERS CASUALTY AND SURETY COMPANY** and **FARMINGTON CASUALTY COMPANY**, stock corporations of the State of Connecticut, DO HEREBY CERTIFY that the foregoing and attached Power of Attorney and Certificate of Authority remains in full force and has not been revoked; and furthermore, that the Standing Resolutions of the Boards of Directors, as set forth in the Certificate of Authority, are now in force.

Signed and Sealed at the Home Office of the Company, in the City of Hartford, State of Connecticut. Dated this 17th day of September, 2003.



By   
Kori M. Johanson  
Assistant Secretary, Bond

**All-Purpose  
Certificate of Acknowledgment**

State of Washington  
County of King }

On September 17, 2003 before me, Kathie L. Wieggers,  
DATE NAME OF NOTARY PUBLIC

personally appeared Suzanne Holden  
NAME(S) OF SIGNER(S)

☒ personally known to me - OR

☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



Witness my hand and official seal.

Kathie L. Wieggers  
SIGNATURE OF NOTARY PUBLIC

Though the data below is not required by law, it may prove valuable to persons relying on the document and prevent fraudulent reattachment of this form.

**CAPACITY CLAIMED BY SIGNER**

- ☐ Individual(s)  
☐ Corporate Officer:  
☐ Title(s)  
☐ Partner(s)  
☒ Attorney-in-Fact  
☐ Trustee(s)  
☐ Subscribing Witness  
☐ Guardian/Conservator  
☐ Other: \_\_\_\_\_

**DESCRIPTION OF ATTACHED DOCUMENT(S)**

Type of Document

**Performance Bond**

Number of Pages

**Two (2)**

Date of Document

**September 17, 2003**

Signer(s) Other Than Named Above

**Copper Eagle Gas Storage LLC**

**SIGNER IS REPRESENTING:**

NAME OF PERSON(S) OR ENTITY(IES)

**Travelers Casualty and Surety Company of America**

**PERFORMANCE BOND**  
**KNOW ALL MEN BY THESE PRESENTS**

Bond Serial No. 929237470

That we: Copper Eagle Gas Storage LLC

of the County of Maricopa in the State of Arizona

as principal, and Continental Casualty Company

of Hartford, Connecticut

**AUTHORIZED TO DO BUSINESS WITHIN THE STATE OF ARIZONA.**

as surety, are held and firmly bound unto the State of Arizona and the Oil and Gas Conservation Commission, hereinafter referred to as the "Commission", in the penal sum of Ten Thousand Dollars and No/100 (\$10,000.00) lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are that, whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to-wit:

0.25 miles West of Intersection of Camelback & Reems Road

(May be used as blanket bond or for single well)

NOW, THEREFORE, if the above bounden principal shall comply with all the provisions of the Laws of this State and the rules, regulations and orders of the Commission, especially with reference to the requirements of A.R.S. § 27-516, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil and Gas Conservation Commission all notices and records required by said Commission, then in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantities, this obligation is void; otherwise it shall remain in full force and effect.

Whenever the principal shall be, and declared by the Oil and Gas Conservation Commission in violation of the Laws of this State and the rules, regulations and orders of the Commission, the surety shall promptly:

1. Remedy the violation by its own efforts, or
2. Obtain a bid or bids for submission to the Commission to remedy the violation, and upon determination by the Commission and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Commission, and make available as work progresses sufficient funds to pay the cost of remedying the violation; but not exceeding, including other costs and damages for which the surety may be liable hereunder, the amount set forth in the first paragraph hereof.

Liability under this bond may not be terminated without written permission of this Commission.

WITNESS our hands and seals, this 4th day of June, 2002

Copper Eagle Gas Storage LLC

By: Matthew [Signature]

Principal

WITNESS our hands and seals, this 4th day of June, 2002

Continental Casualty Company

By: Carol A. Tabone

Surety

Carol A. Tabone, Attorney-in-Fact

(Surety, Resident Arizona Agent  
if issued in a state other than Arizona)

((( If the principal is a corporation, the bond should be executed by its duly authorized officers, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond. ))

Approved  
Date 6-6-02

**STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION**

By: SL Ravig

**STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION**

Bond

File Two Copies

Form No. 2

Permit No. 911



# POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois corporation, National Fire Insurance Company of Hartford, a Connecticut corporation, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania corporation (herein called "the CNA Companies"), are duly organized and existing corporations having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Mikal F. Cronin, Steven E. Minard, Michael D. Specht, William A. Ames, Deborah K. Anderson, Lori L. Dawson, Carol A. Tabone, Individually

of \_\_\_\_\_ Phoenix, Arizona  
their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

--- In Unlimited Amounts ---

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their corporations and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the corporations.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 5th day of December, 2001.



Continental Casualty Company  
National Fire Insurance Company of Hartford  
American Casualty Company of Reading, Pennsylvania

*Michael Gengler*

Michael Gengler

Group Vice President

State of Illinois, County of Cook, ss:

On this 5th day of December, 2001, before me personally came Michael Gengler to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Chicago, State of Illinois; that he is a Group Vice President of Continental Casualty Company, an Illinois corporation, National Fire Insurance Company of Hartford, a Connecticut corporation, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania corporation described in and which executed the above instrument; that he knows the seals of said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said corporations and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporations.



My Commission Expires September 17, 2005

*Diane Faulkner*

Diane Faulkner

Notary Public

## CERTIFICATE

I, Mary A. Ribikawskis, Assistant Secretary of Continental Casualty Company, an Illinois corporation, National Fire Insurance Company of Hartford, a Connecticut corporation, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania corporation do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the corporations printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporations this 17th day of June, 2002



Continental Casualty Company  
National Fire Insurance Company of Hartford  
American Casualty Company of Reading, Pennsylvania

*Mary A. Ribikawskis*

Mary A. Ribikawskis

Assistant Secretary

# ORGANIZATION REPORT

Full Name of the Company, Organization, or Individual

Copper Eagle Gas Storage LLC

Mailing Address and Phone Number

Two North Nevada, Colorado Springs CO 80903 719-520-4533

Plan of Organization (State whether organization is a corporation joint stock association, firm or partnership, or individual)

Limited Liability Company

Purpose of Organization (State type of business in which engaged)

Gas Storage

If a reorganization, give name and address of previous organization

If a foreign corporation give (1) State where incorporated	(2) Name and mailing address of state agent	(3) Date of permit to do business in state
<u>Delaware LLC</u>	<u>CT Corporation 3225 North Central Ave Phoenix AZ 85012</u>	<u>9/16/01</u>
Principal Officers or Partners (if partnership) NAME	TITLE	MAILING ADDRESS
<u>Patrica Shelton</u>	<u>President</u>	<u>Two North Nevada Colorado Springs CO 80903</u>
<u>Greg Gruber</u>	<u>Sr. Vice President</u>	<u>1001 Louisiana Street Houston TX 77002</u>
<u>Winston Johnson</u>	<u>Sr. Vice President</u>	<u>" "</u>
<u>Daniel Martin</u>	<u>Sr. Vice President</u>	<u>" "</u>
<u>Alvin Clark</u>	<u>Vice President</u>	<u>Two North Nevada Colorado Springs CO 80903</u>
<u>Joaquin Garcia Jr</u>	<u>Vice President</u>	<u>" "</u>
<u>William Healy</u>	<u>Vice President</u>	<u>" "</u>
<u>Catherine Palazzari</u>	<u>Vice President</u>	<u>" "</u>
<u>DIRECTORS NAME</u>		<u>MAILING ADDRESS</u>

CERTIFICATE I, the undersigned, under the penalty of perjury state that I am the senior counsel of the El Paso Natural Gas Company, the sole member (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature

Date

Sept. 16, 2003

STATE OF ARIZONA

OIL & GAS CONSERVATION COMMISSION

Organization Report

File One Copy

Form No. 1

Mail completed form to  
Oil and Gas Program Administrator  
Arizona Geological Survey  
416 W Congress., #100  
Tucson, AZ 85701

## ORGANIZATION REPORT

Full Name of the Company, Organization, or Individual

Copper Eagle Gas Storage, LLC

Mailing Address and Phone Number

400 N. 5th Street, MS 8974, Phoenix, AZ 85004 602-250-3109

Plan of Organization (State whether organization is a corporation, joint stock association, firm or partnership, or Individual

Limited Liability Company

Purpose of Organization (State type of business in which engaged)

Underground Gas Storage

If a reorganization, give name and address of previous organization

Not Applicable

If a foreign corporation, give  
(1) State where incorporated

Delaware

(2) Name and mailing address of state agent  
Corporation Trust Center  
1209 Orange Street  
Wilmington, DE 19801

(3) Date of permit to do business in state

9/06/01

Principal Officers or Partners (If partnership)  
NAME

TITLE

MAILING ADDRESS

Matt Reid

General Manager

400 N. 5th Street, MS 8974  
Phoenix, AZ 85004

DIRECTORS NAME

MAILING ADDRESS

Jeffery A. Ballew

401 Edwards St., Ste. 1300, Shreveport, LA 71120

Curt E. Brechtel

400 N. 5th St., 9th Fl., Phoenix, AZ 85004

David L. Hayden

401 Edwards St., Ste. 1300, Shreveport, LA 71120

Matthew J. Reid

400 N. 5th St., 9th Fl., Phoenix, AZ 85004

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the General Manager of the Copper Eagle Gas Storage, LLC (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature

Date

10/31/2001

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION

Organization Report  
File One Copy

Form No. 1

Mail completed form to:  
Oil and Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress., #100  
Tucson, AZ 85701

**RECEIPT**

Date

6-6-2002

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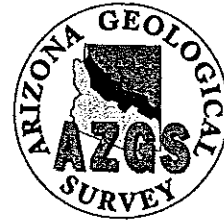
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Janet Napolitano  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500  
[www.azgs.az.gov](http://www.azgs.az.gov)



M. Lee Allison  
Director and State Geologist

July 6, 2006

Ed Lin  
Todd Engineers  
2200 Powell Street Ste 225  
Emeryville CA 94608

911

Dear Ed:

I have enclosed a CD with the raster log files for the Copper Eagle 1-12 Kakerlee, Copper Eagle 1-19 SunCor, and the Copper Eagle 1-24 SunCor.

Sincerely,

A handwritten signature in cursive script, appearing to read "Steve".

Steven L. Rauzi  
Oil & Gas Administrator

Enclosure

## Well Log scans (Permit number identifying numbers)

Well ID	Depth (ft)	Log type	Logging company
---------	------------	----------	-----------------

### Copper Eagle wells in the Luke salt area

Copper Eagle 1-24 SunCor sw sw 24-2n-2w, Drilled 2/2002, TD 6053 ft, Permit 909. Top salt 5050 ft. Core: 5373-5377 and 5377-5383 ft

0909BHCS	100-3455	Borehole Compensated Sonic Log	Schlumberger
0909BHCS1	3000-6061	Borehole Compensated Sonic Log	Schlumberger
0909ECS	4100-6060	GPI ECS	Schlumberger
0909ELAN	4100-6050	GPI ELAN	Schlumberger
0909ELAN1	4100-6050	GPI ELAN	Schlumberger
0909FMI	4170-6060	FMI Images (oversized)	Schlumberger
0909IEL	3000-6053	PEX Express Array Induction Log	Schlumberger
0909ML	3000-6003	PEX Micro Cylindrically Focused	Schlumberger
0909MUD	80-6052	Mud Log (1"/100')	Epoch
0909MUD1	80-6052	Mud Log (5"/100')	Epoch
0909NFD	100-3491	PEX Triple Litho-Density-Comp Neutron	Schlumberger
0909NFD1	3000-6003	PEX Triple Litho-Density-Comp Neutron	Schlumberger

Copper Eagle 1-19 SunCor ne ne 19-2n-1w, Drilled 7/2002, TD 8307 ft, Permit 911. Top salt 1846 ft. Core: none

0911LATL	106-8289	PEX High Resolution Laterolog (2"/100')	Schlumberger
0911LATL1	106-8289	PEX High Resolution Laterolog (5"/100')	Schlumberger
0911ML	106-2089	PEX Micro Cylindrically Focused (2"/100')	Schlumberger
0911ML1	106-2089	PEX Micro Cylindrically Focused (5"/100')	Schlumberger
0911MUD	125-8307	Mud Log	Epoch
0911NFD	90-8311	PEX Triple Litho-Density-Comp Neutron (2")	Schlumberger
0911NFD1	90-8311	PEX Triple Litho-Density-Comp Neutron (5")	Schlumberger

Copper Eagle 1-12 Kakerlee ne se 12-2n-2w, Drilled 9/2002, TD 8334 ft, Permit 912. Top salt 5430 ft. Core: 7415-7428 and 7428-7431 ft

0912BHCS	82-3308	Borehole Compensated Sonic Log Gamma Ray	Schlumberger
0912CBL	100-3310	GPI Cement Bond Log from DSST Recr#1	Schlumberger
0912CBL1	0-7120	Segmented Bond Log Cement Map	Baker Hughes
0912CBL2	100-6888	Segmented Bond Log Gamma Ray	Baker Hughes
0912IEL	82-3304	Platform Express Array Induction	Schlumberger
0912IEL1	3308-8342	Platform Express Array Induction	Schlumberger
0912ML	3308-8281	PEX Micro Cylindrically Focused Log	Schlumberger
0912MUD	124-8334	Mud Log	Epoch
0912NFD	82-3298	PEX Triple Litho-Density-Comp Neutron	Schlumberger
0912NFD1	3308-8281	PEX Triple Litho-Density-Comp Neutron	Schlumberger



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

August 2, 2005

Mr. Greg W. Gettman  
Manager, Facility Planning  
El Paso Western Pipelines  
El Paso Natural Gas Company  
Two North Nevada Avenue  
Colorado Springs, CO 80903

Dear Mr. Gettman:

We have reviewed the application dated June 15, 2005 for an Underground Injection Control (UIC) non-hazardous Class 1 well permit entitled "*El Paso Brine Injection Pilot Study*", submitted on your behalf by Arcadis G&M, Inc. We find the application to be administratively complete.

We are now commencing the Technical Review phase during which we may request additional information if needed to clarify or supplement your application materials. If you have any questions about this letter or about the UIC permitting process, please contact David Basinger of my staff at 415-972-3506 or via e-mail at [basinger.david@epa.gov](mailto:basinger.david@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "D. Albright".

David Albright, Manager  
Ground Water Office, WTR-9

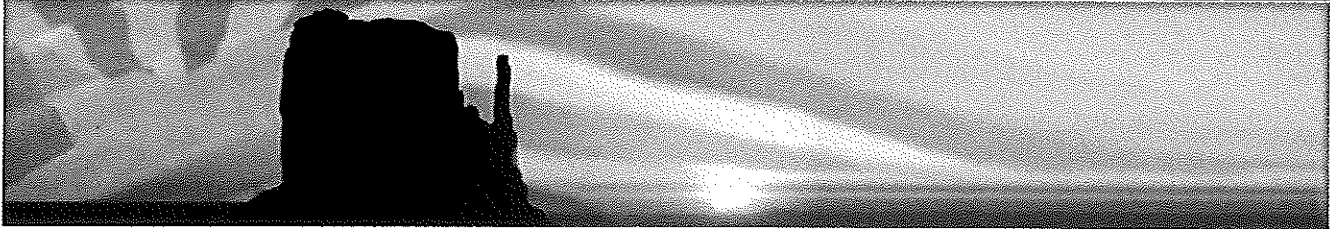
cc: Dr. Peter Kroopnick, R.G., P.H., Senior Scientist, Arcadis G&M, Inc.  
Mr. Barry Rechtovich, Arizona Department of Environmental Quality  
✓ Mr. Steve Rauzi, Arizona Oil and Gas Conservation Commission

# Arizona State Legislature

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search

Forty-seventh Legislature - First Regular Session

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State of Arizona  
House of Representatives  
Forty-sixth Legislature  
Second Regular Session  
2004

-----  
CHAPTER 137  
-----HOUSE BILL 2134  
-----

AN ACT

AMENDING TITLE 49, ARIZONA REVISED STATUTES, BY ADDING CHAPTER 9; RELATING TO NATURAL GAS STORAGE FACILITIES.

(TEXT OF BILL BEGINS ON NEXT PAGE)

Be it enacted by the Legislature of the State of Arizona:

Section 1. Title 49, Arizona Revised Statutes, is amended by adding chapter 9, to read:

**CHAPTER 9****NATURAL GAS STORAGE FACILITIES****ARTICLE 1. GENERAL PROVISIONS**49-1301. Definition

IN THIS CHAPTER, UNLESS THE CONTEXT OTHERWISE REQUIRES, "NATURAL GAS STORAGE FACILITY" MEANS A FACILITY THAT IS EITHER UNDERGROUND OR ABOVE GROUND WITH A CAPACITY OF AT LEAST FIVE HUNDRED THOUSAND CUBIC FEET AND THAT IS USED PRIMARILY FOR THE STORAGE OF NATURAL GAS, EXCLUDING LIQUEFIED NATURAL GAS.

49-1302. Natural gas storage facilities; limitation

A NATURAL GAS STORAGE FACILITY SHALL NOT BE LOCATED WITHIN A COUNTY WITH A POPULATION OF MORE THAN ONE MILLION FIVE HUNDRED THOUSAND PERSONS, IF THE FACILITY IS LOCATED WITHIN NINE MILES OF AN ACTIVE DUTY MILITARY AIR FORCE BASE THAT HAS PILOT TRAINING AS ITS PRIMARY MISSION.

49-1303. Exemption of political subdivisions

THE PROVISIONS OF THIS CHAPTER ARE CUMULATIVE AND SUPPLEMENTAL AND DO NOT APPLY TO A POLITICAL SUBDIVISION THAT BY ORDINANCE OR RESOLUTION HAS ADOPTED PROVISIONS RESTRICTING NATURAL GAS STORAGE FACILITIES THAT ARE AT LEAST AS STRINGENT AS THE RESTRICTIONS IN THIS CHAPTER.

**Sec. 2. Findings**

The legislature finds that a natural gas storage facility shall not be located within a county with a population of more than one million five hundred thousand persons if the facility is located within nine miles of an active duty military air force base that has pilot training as its primary mission. The legislature also finds that these facilities are presumptively primarily used for activities that are subject to state regulation as provided by 49 United States Code 60104c given the dramatic increase in the number of electrical generating facilities, alternative fuel uses and the population of Arizona.

The legislature further finds that the operation of Luke Air Force Base is essential to the preparation of pilots for the national defense of our country. It is one of the few, if only, sites in the United States where geography, weather, training mission



and accessible bombing ranges provide the best possible training for advanced tactical fighter training. The legislature also finds that a great deal of the economy in central Arizona is built upon, and dependent upon, Luke Air Force Base. The legislature finds that the economy would suffer a significant loss if the missions at Luke Air Force Base were terminated. The legislature additionally finds that the continental base evaluation process under the federal government will look to the protective provisions made to protect military bases. Finally, the legislature finds that in the view of security concerns and safety concerns, a buffer must be established around the perimeter of Luke Air Force Base from certain activities in order to preserve the integrity of the base.

Therefore, the legislature declares that it is essential that certain industrial activities including the storage of high volumes of natural gas be separated from the boundary of Luke Air Force Base in order to remove the terrorist threat and to remove any threat relating to safety. The proposed buffer zone was established through discussions with Luke Air Force Base. The legislature further declares that the restrictions contained in this legislation are meant to apply only to Luke Air Force Base because of the unique circumstances that exist at Luke Air Force Base and are not intended to apply to other locations in Arizona.

Sec. 3. Emergency

This act is an emergency measure that is necessary to preserve the public peace, health or safety and is operative immediately as provided by law.

APPROVED BY THE GOVERNOR APRIL 23, 2004.

FILED IN THE OFFICE OF THE SECRETARY OF STATE APRIL 23, 2004.

# BILL STATUS OVERVIEW

HB2134

SPONSORS:	NELSON	P	ARNOLD	P	HANSON	P
	HERSHBERGER	P	HUBBS	P	JAYNE	P
	LOREDO	P	BLENDU	P	BURTON CAHILL	C
	GALLARDO	C	GRAY L	C	MIRANDA B	C
	PREZELSKI	C	STUMP	C	BENNETT	C

TITLE: natural gas storage facilities; restrictions

HOUSE FIRST READ: 02/10/04

COMMITTEES: ASSIGNED COMMITTEES ACTION

02/10/04	ENV	02/16/04	W/D
02/10/04	UTIL&MUN	02/18/04	(4-3-2-0-0) DPA
02/10/04	NRA	03/12/04	(8-1-0-3-0) DPA
02/10/04	RULES	03/15/04	(7-0-0-5-0) C&P

SECOND READ: 02/11/04

MAJORITY CAUCUS: 03/15/04 Y

MINORITY CAUCUS: 03/15/04 Y

COW ACTION: 03/15/04 ACTION: DPA

AMENDMENTS

NRA passed

Util & Mun w/d

THIRD READ:	DATE	AYES	NAYS	NV	EXC	EMER	AMEND	RFE	2/3 Vote	RESULT
	03/15/04	50	8	2	0	0	Y			

TRANSMIT TO SENATE: 03/16/04

SENATE FIRST READ: 03/16/04

SECOND READ: 03/18/04

COMMITTEES: ASSIGNED COMMITTEES ACTION

03/18/04	NRT	03/30/04	(7-0-0-0)	DP
03/18/04	RULES	04/05/04		PFCA

MAJORITY CAUCUS: 04/06/04 Y

MINORITY CAUCUS: 04/06/04 Y

COW ACTION: 04/12/04 ACTION: DPA

AMENDMENTS

Amended by RULES - adopted

THIRD READ:	DATE	AYES	NAYS	NV	EXC	EMER	AMEND	RFE	2/3 Vote	RESULT
	04/13/04	30	0	0	0	0	Y			

TRANSMIT TO HOUSE: 04/13/04

MAJORITY CAUCUS: 04/14/04 Y

MINORITY CAUCUS: 04/14/04 Y

Concurrence recommended

HOUSE CONCURRENCE:	DATE	AYES	NAYS	NV	EXC
	04/19/04	0	0	0	0

HOUSE FINAL READ:	DATE	AYES	NAYS	NV	EXC	EMER	RFE	2/3 VOTE	RESULT
	04/19/04	52	3	5	0	E			

TRANSMITTED TO: GOVERNOR 04/19/04

ACTION: SIGNED 04/23/04

CHAPTER: 137 E

CHAPTERED VERSION: Senate Engrossed Version

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## Senate signals approval to bills to protect Luke Air Force Base

Associated Press  
Apr. 12, 2004 05:46 PM

The full Arizona Senate signaled its approval Monday of two proposals intended to help protect Luke Air Force Base from possible closure.

State officials are working to protect Luke from urban encroachment and keep the base and other major military installations open.

They worry that the military will close the base west of Phoenix - and take away its thousands of jobs - if its mission of training F-16 pilots is compromised.

One bill (HB2134) would prohibit El Paso Corp. from building an underground natural gas storage facility near Luke, a major pilot training base located in Glendale.

The business initially opposed the bill because it planned a massive storage facility in salt domes to help meet growing demand for gas in Arizona. It has since dropped its opposition.

The other bill (HB2141) would extend land-use restrictions that already apply to military air bases in Arizona to a Luke auxiliary field used for instrument approaches.

After Monday's preliminary vote, the proposals now move to final votes in the Senate. Both bills cleared the House last month.

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On the Net:

Arizona Legislature: <http://www.azleg.state.az.us>

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April 5, 2004

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## Legislature hits its target in protecting Luke AFB

3 bills are the right way to go

Apr. 3, 2004 12:00 AM

There was never a shred of doubt.

It was done with the precision of a smart bomb even though the Legislature is better known for its clumsy and convoluted ways of dealing with important matters than it is for clarity and resolve.

But this week the Senate Natural Resources and Transportation Committee and its chairwoman, Sen. Linda Binder of Lake Havasu City, resolutely dispatched three bills that are designed to put in place a few more protections for Luke Air Force Base.

The unanimous votes were another sign that Luke and the rest of the state's military installations are on legislative radar screens like never before. It's an extremely encouraging sign because lawmakers realize the tremendous stakes involved were Luke or one of Arizona's other major bases recommended for mothballs. The bases, which collectively pump \$5.6 billion into Arizona's economy annually, once again must prove their worth to the Base Realignment and Closure Commission because the Department of Defense wants to close or realign about 25 percent of the nation's military bases in 2005.

West Valley cities, Luke, the Maricopa County Board of Supervisors and landowners have led the fight to stop El Paso Gas Corp. from storing 10 billion cubic feet of natural gas in underground salt caverns on land it owns adjacent to Luke. Rep. John Nelson's legislation, House Bill 2134, to prohibit the storage of natural gas within nine miles of the base sailed through Binder's committee, its first stop in the Senate after passing the House on a lopsided 50-8 vote.

Peter Jaskoski, the state government affairs director for El Paso from Houston, acknowledged the strong opposition to its proposed Copper Eagle project, but said its customers were lost in the debate and a storage facility is still needed. He said it was never El Paso's intention to jeopardize the safety and security of Luke or West Valley communities.

El Paso wants it both ways. It says the safety and security of Luke are of "paramount importance," but it won't publicly abandon its plans to store natural gas next to Luke - a proposal that easily could be the death of Luke in the BRAC deliberations.

Sen. Robert Blendu, R-Litchfield Park, picked up on that. He said the Legislature's concern is protecting the base; natural gas storage is farther down the list. If El Paso were to go ahead and file papers with the Federal Energy Regulatory Commission and circumvent the intent of lawmakers, Blendu said it would be "a bit discouraging."

Pardon us, senator, but you're much too kind. Action by El Paso to proceed in the face of community outrage would be an in-your-face assault against the residents of the West Valley. We hope it doesn't come down to any sort of unilateral action, and that El Paso looks elsewhere for a storage facility.

Two other bills also should help solidify the case that Arizona is working in partnership to protect its bases. One measure, HB 2141, would impose noise contours and accident potential zones around Luke's Auxiliary Airfield One to halt the kind of residential encroachment that's threatened Luke. Pilots of F-16 fighters use the field, northwest of Surprise, for instrument training at altitudes as low as 150 feet above the ground. The other measure, HB 2662, would require the Land Department and the state Real Estate Department

## Steve Benson

See what The Arizona Republic's Pulitzer Prize-winning cartoonist has drawn up lately.



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to maintain maps that show military training routes.

This is the kind of sharp focus that our military bases need. The more protections that lawmakers enact, the better the chance that these economic engines will survive the next round of base closings.

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## Senate committee backs bills to protect Luke

Associated Press  
Mar. 30, 2004 03:54 PM

Two bills intended to help protect Luke Air Force Base from possible closure sailed through a Senate committee Tuesday.

One bill (HB2134) approved by the Committee on Natural Resources and Transportation would prohibit El Paso Corp. from building an underground natural gas storage facility near Luke, a major pilot training base located in Glendale.

The other bill (HB2141) would extend land-use restrictions that already apply to military air bases in Arizona to a Luke auxiliary field used for instrument approaches.

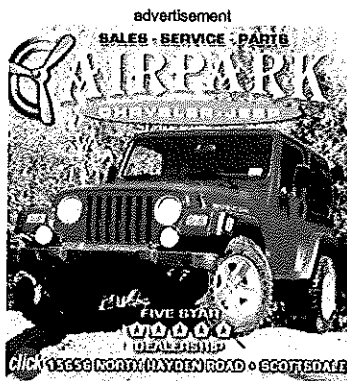
Both bills go to the full Senate following a Rules Committee review.

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On the Net:

Arizona Legislature: <http://www.azleg.state.az.us>El Paso Corp.: <http://www.elpaso.com>Luke Air Force Base: <http://www.luke.af.mil/public.htm>

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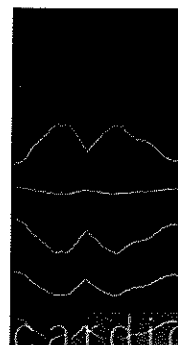
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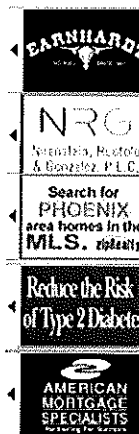
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## Ensuring the future

*Bill banning gas storage in caverns needed despite APS decision*

Mar. 27, 2004 12:00 AM

On Tuesday afternoon in a state Senate committee, there is good reason to believe that legislation to prohibit the storage of natural gas in underground salt caverns in the West Valley will pass handily.

It should, now that the state's largest utility - Arizona Public Service Co. - has withdrawn its opposition to Rep. John Nelson's bill, which a week ago zoomed out of the Arizona House on a lopsided 50-8 vote.

The House vote was a sign of the breadth and depth of the opponents to El Paso Natural Gas Corp. and its proposed Copper Eagle facility, which would store 10 billion cubic feet of natural gas a stone's throw from Luke Air Force Base.

APS and El Paso had urged the defeat of Nelson's bill, insisting that Arizona needs reliable supplies of natural gas to meet its growth projections.

The state does, but this proposal ran counter to safety and security concerns. Ever since the idea was first vetted, the opponents said they weren't trying to undermine attempts to increase supplies of natural gas, only that the salt caverns were in the wrong location. Other salt caverns far from populated areas might work, they said, and other companies were exploring pipeline projects to bring more natural gas into Arizona.

The APS retreat represents a victory for the West Valley, Luke and the nearby landowners who would see the value of their land plummet if gas were stored underground. All West Valley cities and the Maricopa County Board of Supervisors had passed resolutions opposing El Paso's proposal. In an unusual offensive, the Luke brass went on the record and said they also had safety and security concerns.

It was a noble united front with a clear and passionate message: Stop El Paso's proposal. While El Paso, too, withdrew its opposition to Nelson's legislation, House Bill 2134, the West Valley isn't out of danger. El Paso still could petition the Federal Energy Regulatory Commission for its proposed Copper Eagle storage facility even if Nelson's bill becomes law. We would hope El Paso would scrap its plan and heed the wishes of the West Valley.

Sen. Linda Binder, R-Lake Havasu City, chairwoman of the Natural Resources and Transportation Committee, has agreed to hold informal hearings to seek solutions to natural gas storage and pipeline problems. There are legitimate needs. New power plants and others under construction will require dependable supplies.

"This is looking into the future," says Marty Shultz, a vice president of Pinnacle West Capital Corp., the parent company of APS.

APS found itself in an uncomfortable situation, at odds with the entire West Valley and Luke. On more than one occasion APS said that if it came down to a decision between El Paso and Luke, it would side with Luke, an economic engine for the region. Gas storage under Luke could have been the nail in the coffin for Luke in the next round of base closings and realignment next year.

The retreat by the utilities does not mean Nelson's bill is superfluous. Glendale Mayor Elaine Scruggs says, "We in the West Valley still need that protection."

Consider Nelson's bill an insurance policy for the future. Sen. Binder's committee should embrace it Tuesday, readying it for a Senate vote and signing by Gov. Janet Napolitano.

This is the kind of community support that could make a difference to the Base Realignment and Closure Commission deliberations when it must recommend which of the nation's military bases ought to be closed.

The mission is not yet accomplished.

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## Time to withdraw natural gas storage proposal

Mar. 26, 2004 12:00 AM

### Time to withdraw natural-gas storage proposal

It's good that Arizona Public Service Co. and El Paso Natural Gas Corp. have withdrawn their opposition to legislation sponsored by Rep. John Nelson. But it's only a small step. Nelson's bill to ban the storage of natural gas in underground salt caverns near Luke Air Force Base was prompted by El Paso's proposal to store nearly 10 billion cubic feet of gas. West Valley cities, Maricopa County and Luke all have cited legitimate security and safety fears - not to mention the possible death knell for Luke in the next round of base closings - were the Copper Eagle storage facility built. Nelson's bill is still necessary to keep compiling the record against the storage. Regrettably, El Paso is mum on whether it'll seek approval for its storage project with the Federal Energy Regulatory Commission, a body that trumps state law. El Paso should listen to the people and cancel its project.

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## Luke backers win twice in fight over gas facility

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**David Madrid**  
The Arizona Republic  
Mar. 16, 2004 12:00 AM

A rally by West Valley mayors, council members, firefighters, residents and other Luke Air Force Base defenders was held at the state Capitol on Monday to stop a natural-gas storage facility from being built near Luke. Their efforts bore fruit later in the day on two fronts.

A bill championed by Luke supporters, House Bill 2134, passed a vote of the entire House, 50-8. The bill, which seeks to stop the facility from being built near Luke, now goes to the Senate for consideration.

The protesters were also trying to stop a measure sponsored by Natural Resources and Agriculture Committee Chairman Chuck Gray, R-Mesa, that would have allowed El Paso Natural Gas Co. to pursue Federal Energy Regulatory Commission approval for the facility.

The proposed complex would initially hold 9.6 billion cubic feet of natural gas in three large salt caverns.

The 70 to 100 protesters got what they wanted when Gray's HB 2389 died in the Rules Committee on a 4-4 tie vote along party lines, Democrats voting against the bill and Republicans for it.

Luke proponents say the facility's location, across the street from base housing and a school and within a mile of the base's runways and its hospital, would be a safety risk and would endanger the base in 2005, when a quarter of the country's military installations will be chosen for closure.

El Paso and Pinnacle West Capital Corp. argue that the salt dome near Luke is the only place the facility can be safely built. Advocates for the facility have also said it would help alleviate price spikes in the event of a future natural-gas shortage.

Glendale Mayor Elaine Scruggs said the rally helped Luke's cause because base supporters met face to face with legislators who were not fully aware of the issues surrounding the controversy.

"Just about everybody had some general knowledge of the legislation in terms of specifics, but a lot of them didn't understand all the aspects of the proposed facility," Scruggs said. "They were not aware that there are numerous alternatives in other parts of the state. Certainly, they weren't all aware that as a public-safety issue, this goes beyond Luke Air Force Base."

Protesters against the facility were joined by Phoenix Mayor Phil Gordon and Councilman Claude Mattox.

"Luke Air Force Base is one of the biggest economic engines we have," Gordon said. "Protecting that asset, while it may be located on the west side, is critical to the success of the entire Valley."



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## Bills clash on Luke, gas storage

David Madrid  
 The Arizona Republic  
 Mar. 13, 2004 12:00 AM

A bill that would prevent a huge natural-gas storage facility from being built next to Luke Air Force Base has competition from another measure that would pretty much do the opposite.

House Bill 2134 would prevent the use of three salt caverns next to the base to hold 9.6 billion cubic feet of natural gas. It cleared the Natural Resources and Agriculture Committee by an 8-1 vote Friday.

But Chairman Chuck Gray, R-Mesa, got a bill through his committee that would allow El Paso Natural Gas Co. to win approval for the facility from the Federal Energy Regulatory Commission while preventing the storage of gas there until after a quarter of the nation's military bases are chosen for closure. House Bill 2389 was approved 5-4.

Gray said that preventing El Paso from using its land to store gas would amount to a private-property taking.

He dismissed arguments against the facility by West Valley cities, the Maricopa County Board of Supervisors, landowners near the base and Luke as being unsubstantiated.

Rep. John Nelson, R-Glendale, a sponsor of the bill to stop the facility, said landowners don't have unlimited property rights. "If you buy it (land) and don't do the due diligence you need on it, then you are making assumptions and you pay the price for that," Nelson said.

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## Gas-storage bill to be heard

Measure would ban use of 3 salt caverns near Luke

David Madrid  
The Arizona Republic  
Mar. 12, 2004 12:00 AM

A bill that Luke Air Force Base protectors hope will prevent a natural-gas storage facility from being built near the base will be heard at 9 a.m. today in a legislative committee in the state House of Representatives.

House Bill 2134 has been held by the committee chairman, Rep. Chuck Gray, R-Mesa. Without a hearing, the bill will die. After several meetings among lobbyists, the base, House Speaker Jake Flake, Gray and the bill's sponsor, Rep. John Nelson, Gray agreed to hear the measure.

The bill would prevent a natural-gas storage facility from being built within a nine-mile radius of Luke. El Paso Natural Gas Co. wants to store 9.6 billion cubic feet of natural gas in three mammoth salt caverns within a mile of Luke, its hospital, base housing and a school.

Opposed to the location are the base, all the cities in the West Valley, the Maricopa County Board of Supervisors, the Sun City communities and Westmarc, a western Maricopa County community leadership group. Those opponents say the storage facility could threaten Luke when a quarter of the nation's military bases are chosen for closure in 2005. They also question the safety of the facility and the natural-gas pipeline to it.

Proponents argue that the salt dome near Luke is the only place in the state where such a large amount of natural gas can be safely stored.

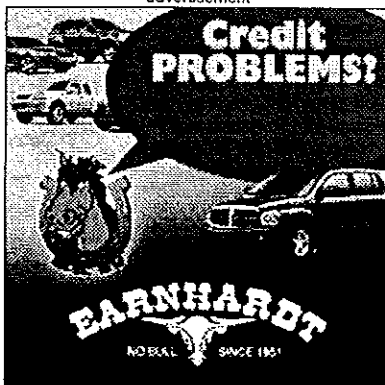
They say the facility would provide a dependable supply of natural gas, preventing price spikes.

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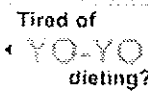
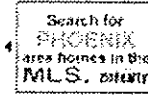
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Subject: HB 2134 - Luke salt deposit

From: "Larry Fellows" <larry.fellows@azgs.az.gov>

Date: Mon, 01 Mar 2004 09:35:00 -0700

To: Chuck Gray <cdgray@azleg.state.az.us>

CC: Kathi Knox <kknox@azleg.state.az.us>, Jake Flake <jflake@azleg.state.az.us>

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Representative Gray:

The salt deposit near Luke AFB is an extremely valuable, known resource that could handle large underground storage facilities.

The Arizona Geological Survey recently released a report that describes known and potential salt deposits in Arizona (Circular 30, "Arizona Has Salt!"). Steve Rauzi, an experienced petroleum geologist on our staff, is the author. You may have seen maps from this report. These maps could easily give one the false impression that salt deposits are extremely common in Arizona. Salt is KNOWN in only nine areas of the State, but the distribution of the salt within those areas is not known. More is known about the salt near Luke than in any of the other 8 areas. Our Map 36, which Steve also prepared, shows the distribution and depth to the top of the Luke salt. If you haven't seen Circular 30 or Map 36, please let me know.

Eighteen areas in Arizona have POTENTIAL for salt to be present. This conclusion is based only on indirect evidence. Some of the areas have never been drilled and the subsurface geology is unknown. Steve identified these areas to encourage further exploration and, hopefully, discovery of a valuable resource.

Natural gas is routinely stored in salt caverns and natural gas pipelines cross the country.

If you'd like more information about Arizona's salt deposits, we will gladly provide it.

--

Larry D. Fellows  
Director and State Geologist  
Arizona Geological Survey  
[Larry.Fellows@azgs.az.gov](mailto:Larry.Fellows@azgs.az.gov)  
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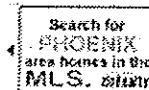
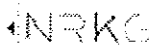
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# Bill to bar gas storage near Luke on hold

David Madrid  
The Arizona Republic  
Feb. 28, 2004 12:00 AM

A legislative bill that would prevent a natural-gas storage facility from being built within a nine-mile radius of Luke Air Force Base is in a holding pattern for at least another week as opposing sides negotiate.

Rep. Chuck Gray, R-Mesa, who was recently appointed as a committee chairman, has refused to hear House Bill 2134. House Speaker Jake Flake has appointed a small committee to work things out.

The bill's sponsor, Rep. John Nelson, R-Glendale, has agreed to amend the measure so it is specific to Luke.

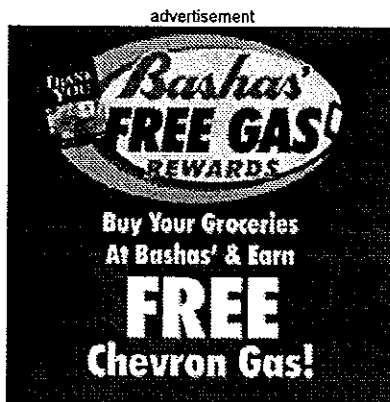
El Paso Natural Gas Co. wants to store 9.6 billion cubic feet of natural gas near Luke in three mammoth salt caverns. A 35-mile-long, 36-inch pipeline would likely cross the base's southern departure corridor (where armed flights take off), skirt the base to the west and north and end at the storage facility on the east.

Gray said Friday he hadn't decided to kill the bill, but if it died and was determined to be needed, the issue could be revived.

He said he supports Luke but that the bill has problems, such as not accounting for property rights, population growth and inadequate natural-gas storage capacity and infrastructure in the state.

"It (the bill) doesn't address the issue of this is probably the best salt-dome formation in the state that could handle this kind of a storage facility," he said. "It also doesn't really address whether Luke's on the (base-closure) commission list or not, and we have to investigate how that plays out."

Nelson said West Valley cities and the base don't want the facility near Luke, so he isn't giving up on his bill.



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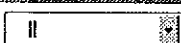
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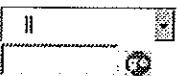
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## Bill slowed to bar storage of natural gas near Luke

David Madrid  
The Arizona Republic  
Feb. 27, 2004 12:00 AM

Legislative efforts to stop a mammoth natural-gas storage facility from being built near Luke Air Force Base have screamed to a halt after an East Valley committee chairman refused to hear the bill.

Supporters are willing to amend House Bill 2134 so that it is specific only to Luke. The refusal of Rep. Chuck Gray, a Mesa Republican, to hear the bill has angered West Valley leaders, who say they will not compromise if it means the El Paso Natural Gas Co. facility will be built near Luke.

They are concerned about safety and they fear the proximity of the facility to the base could hurt when a quarter of the nation's military bases are chosen for closure in 2005.

The Copper Eagle Natural Gas Storage Facility would store 9.6 billion cubic feet of natural gas in three large salt caverns east of the base and would likely have a 35-mile-long, 36-inch pipeline running from the facility to the north and the west of the base and crossing its southern departure corridor, where live-armed flights take off.

Rep. John Nelson, R-Glendale, the prime sponsor of the bill, said that Gray is concerned with the gas company's property rights. Gray could not be reached for comment Thursday.

"A committee chair should represent more than just a small parochial view of the state, and that's what's happening," Nelson said.

County Supervisor Max Wilson said unlimited property rights don't come with purchased land. Zoning must be granted, he said.

"This is just about money and nothing else," Wilson added.

Glendale Mayor Elaine Scruggs said the issue is about preserving human life.

That is also one concern of Luke's commander, Brig. Gen. Philip Breedlove.

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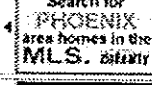
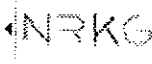
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After meetings with the gas company in early February, Breedlove sent it a letter stating that anything that adversely affects the safety and security of the base's airmen, their families or the base's mission concerns him greatly.

The facility would sit within a mile of Luke, its base housing, hospital and a school.

Martin Shultz, a lobbyist for Pinnacle West Capital Corp. and APS, opposes the bill. He said everyone should focus on reaching a solution because the spot near Luke is the best location for the facility.

"We wouldn't support solutions that compromise Luke," Shultz said. "We're some of its biggest supporters. . . ."

Reach the reporter at [david.madrid@arizonarepublic.com](mailto:david.madrid@arizonarepublic.com) or (602) 444-6926.

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## Unnatural proposal

*Storing natural gas near Luke base is a bad idea*

Feb. 21, 2004 12:00 AM

El Paso Natural Gas Co. wants to store huge amounts of natural gas in vast underground salt caverns on the Valley's west side. Just about everybody who lives or works in the area thinks it's a bad idea.

It would be wrong to dismiss the opposition as NIMBY-ism run amok. This is a united coalition that includes cities across the West Valley, the Maricopa County Board of Supervisors, Luke Air Force Base, landowners and state lawmakers.

They believe the proposed storage facility would:

- Pose too great a safety risk in an urban environment.
- Jeopardize Luke's mission as the nation's premier training facility for F-16 fighter pilots at a time when Luke faces the next round of base closings.

Within this Iron Curtain of Resistance there's a tacit understanding that there may be a need for natural gas storage. After all, the Valley's growth curve is high; merchant power plants are going in; natural gas is a proven fuel source; and residential demands for electric power will keep rising.

According to El Paso, the proposed project on land the company owns would increase the availability of supplies and customers would not have to reserve extra pipeline capacity. When surges in demand hit, the gas could be removed, and at a lower cost than if purchased on the spot market. It's a rational argument buttressed by the firm's projection that natural gas demand will grow by 50 percent over the next 15 years.

But El Paso is not the only company looking at the Valley to expand. According to the Arizona Corporation Commission, other firms are planning new pipelines to capitalize on the region's burgeoning growth.

El Paso officials insist the proposed Copper Eagle facility would be safe and the site is ideal geologically. It's also not far from El Paso's main east-west pipeline.

"We've learned a lot since Carlsbad," says El Paso spokesman Mel Scott, "to make sure nothing like that happens again." Four years ago, 12 campers lost their lives in New Mexico when a gas line ruptured, and West Valley opponents such as Avondale Mayor Ron Drake remain unconvinced about company pronouncements. "Weird stuff happens," he says.

The proposed facility, we believe, would be in the wrong location. It's smack in the middle of the West Valley's growth path. It's within a mile of Luke, its base housing, hospital and Luke Elementary School, and a 36-inch pipeline would cross the base's Accident Potential Zone, where fighter jets sometimes crash.

An independent risk analysis revealed that under certain climate conditions, a gas leak of 7 percent of the 9.6 billion cubic feet capacity could produce an explosive plume covering an area of 2.8 miles which, according to Rusty Mitchell, chief of Luke's community initiatives team, would "cover the entire base."

Though El Paso officials have quietly been meeting with stakeholders, one by one cities have been passing resolutions against the project. The county supervisors have done so, too. And state Rep. John Nelson, R-Glendale, has introduced legislation that would prohibit large natural gas storage facilities within three miles of a city, airport or military airport.

This is a strong line-up, one that ought to give El Paso strong pause. But in matters such as these, the Federal Energy Regulatory Commission will have the final say.

We hope the process doesn't get that far. We hope that El Paso will look elsewhere - away from populated areas - to store its natural gas. There are salt caverns in other parts of Arizona. It makes little sense to pursue this project in this location. It's




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February 25, 2004

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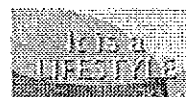
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## Protecting Luke is aim

 Restricting use near  
 airfield 1 of proposals

 Paul Davenport  
 Associated Press  
 Feb. 19, 2004 12:00 AM

National security concerns and fears about the possible closure of Arizona military bases have legislators moving to step up efforts to protect bases and flight training routes.

"After 9/11, I'm going to lean on the side of caution," Rep. Ray Barnes, R-Phoenix, said while voting for a bill to keep a natural-gas company from locating an underground storage facility near Luke Air Force Base.

Other bills endorsed by the Utilities and Municipalities Committee on Wednesday would mandate new disclosures to property buyers under low-level flight routes that crisscross huge expanses of rural Arizona and restrict land use around an auxiliary airfield called crucial to Luke air base, a major pilot training base.

The committee voted unanimously for those two bills, House Bill 2140 and House Bill 2141, and split 4-3 on the storage facility bill, House Bill 2134.

Consideration of those bills came as a related bill, House Bill 2605, on land-use planning and base preservation projects awaits action in the House. That bill was recommended by a task force appointed by Gov. Janet Napolitano.

Some of the votes Wednesday left committee members struggling as they weighed competing interests that include property rights, national security and the state's economy.

"The military bases are prime economic generators within the state," said Rep. John Nelson, sponsor of the three bills.

Luke's Auxiliary Field No. 1, located just outside Surprise and about 15 miles northwest of Luke, is used by pilots to practice landing approaches though not actual landings.

The auxiliary field was built in 1941 in what was then bare desert. Housing developments are now popping up in the area.

Nelson's bill would bar local governments from allowing subdivisions in the noise and accident-potential zones around the auxiliary field, restrictions already in place for major military bases.

Luke itself cannot handle all of those thousands of sorties so the auxiliary field and the Air Force want to keep those low-level flights away from populated areas as much as possible, a military official said.

"This is some of our most dangerous flying," said James "Rusty" Mitchell, a retired officer who directs Luke's community initiatives team.

"An aircraft going down in that area is going to impact several houses."

That means the auxiliary field also must be protected from encroachment to keep Luke off the hit list in the next round of military base closings, said Nelson, R-Glendale.

"If we don't help the base maintain its mission, we stand as good a

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chance as anybody of losing it," Nelson said.

Nelson and others said behind-the-scenes talks are under way to negotiate compromise legislation with real estate developers but that finding money to compensate landowners whose property can't be developed is a problem.

The flight-route bill is an attempt to start dealing with what could be a problem as development takes place in more rural Arizona areas where military pilots have flown for decades, many going to and from the Barry Goldwater range, Nelson said.

Changing the routes to avoid new development is not an option because of the environmental hurdles involved, said Rep. Jennifer Burns, R-Tucson.

Nelson said he sympathized with El Paso Corp. but opposes the Houston-based company's plan for a storage facility in salt domes near Luke.

Peter Jaskoski, El Paso's director of state government affairs, said the company needs the storage to make sure it has enough gas on hand to meet Arizona's growing demand.

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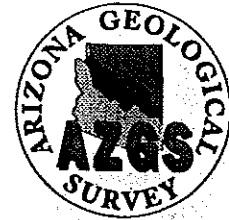
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Larry D. Fellows  
Director and State Geologist

February 11, 2004

Mr. Jerry Worsham  
Gammage & Burnham  
Two N Central Ave 18th Floor  
Phoenix AZ 85004

911

Dear Mr. Worsham:

I have enclosed my letter of December 17, 2003 notifying El Paso of its need to request temporary abandonment for its three stratigraphic wells and El Paso's subsequent request dated January 7, 2004. I distributed these letters to the Oil and Gas Commissioners as background information for their January 23, 2004 meeting.

The Oil and Gas Conservation Commission voted in its meeting of January 23, 2004, to grant temporary abandonment to El Paso's wells for a period of five years. I have enclosed a copy of the minutes that record that vote.

Sincerely,

*Steven L. Rauzi*

Steven L. Rauzi  
Oil & Gas Administrator

Enclosures

**R' BERT L. JONES**

22725 North Dusty Trail Boulevard  
Sun City West, Arizona 85375-2043

623-214-0761 (phone & fax )

jobobaz@aol.com

1/24/04

Professional Geologist, Ret.  
Professional Civil Engineer, Ret.  
Director, PORA Board, Sun City West  
Commissioner, Arizona Oil and Gas Conservation Commission  
Commissioner, Maricopa County Planning and Zoning Commission

Steve,

I thought you would  
be interested in this  
editorial in today's  
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Bob

# West Valley OPINIONS

THE ARIZONA REPUBLIC

Editorials represent the position of *The Arizona Republic*, whose Editorial Board consists of Phil Boas, Richard deUriarte, Jennifer Dokes, Cindy Hernandez, Kathleen Ingley, Doug MacEachern, Joel Nilsson, Dan Nowicki, O. Ricardo Pimentel, Robert Robb, Paul Schatt, Linda Valdez, Ken Western and Steve Benson.

## EDITORIAL

# Salt caverns wrong place for natural gas storage

**Our stand:** Site too close to everything

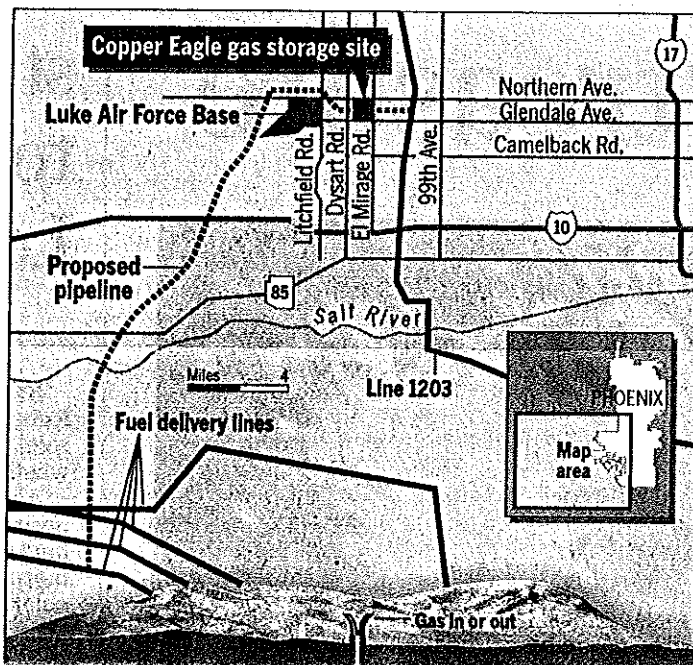
The defensive lineup, on paper, is rock-solid — about as good as it gets. There are the mayors and managers of every municipality in the West Valley, the supervisors from Maricopa County, landowners and residents, top brass at Luke Air Force Base and for good measure, state lawmakers.

But as impressive as this list of combatants is, theirs is probably not an impregnable defense against plans of El Paso Natural Gas Co. to store a huge amount of gas — 9.6 billion cubic feet — in three salt caverns underground in the West Valley. That's because the Federal Energy Regulatory Commission will have the last word.

We hope it doesn't get to that point. El Paso has been briefing West Valley offi-

## Gas storage cavern

Gas can be stored cheaply in salt caverns, and salt is a good storage medium for natural gas, but opponents of the proposed facility don't think it should be placed in that location.



top brass at Luke Air Force Base and for good measure, state lawmakers.

But as impressive as this list of combatants is, theirs is probably not an impregnable defense against plans of El Paso Natural Gas Co. to store a huge amount of gas — 9.6 billion cubic feet — in three salt caverns underground in the West Valley. That's because the Federal Energy Regulatory Commission will have the last word.

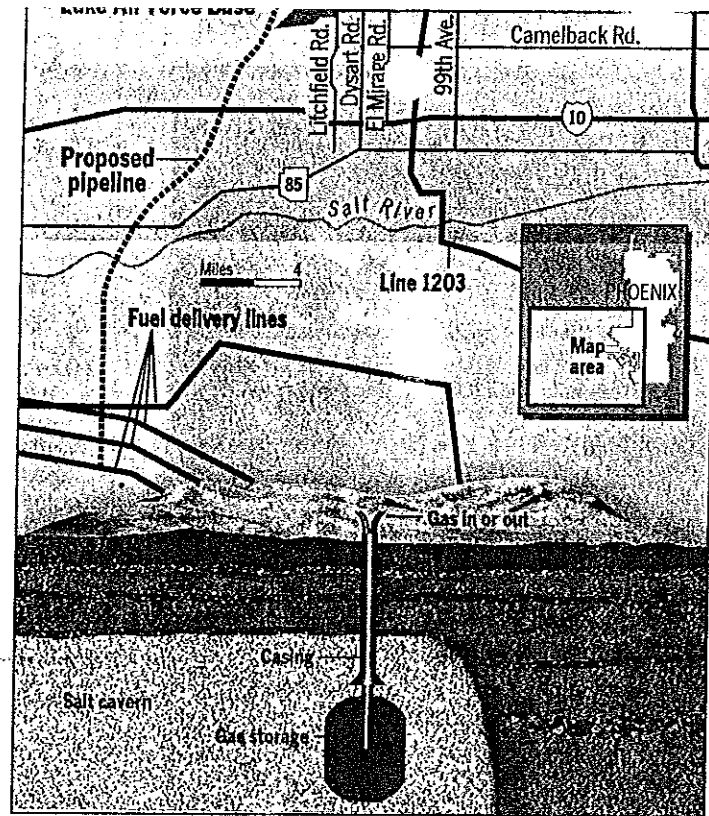
We hope it doesn't get to that point. El Paso has been briefing West Valley officials for the past couple of months, and the information the company has disclosed — to be blunt — hasn't set well.

City after city is passing resolutions against the proposal. The Board of Supervisors has taken a strong stand as well. State Rep. John Nelson, a Glendale Republican, has introduced legislation to prohibit large natural gas storage facilities from being located within three miles of a municipal boundary, airport, military airport or school. It should be a legislative priority.

El Paso, which owns the land near El Mirage Road between Northern and Glendale avenues, should listen to the people. Despite company promises of safety, any way you slice it a storage facility within a mile of Luke Air Force Base and its base housing, hospital and elementary school is the height of foolishness.

Call it contempt for the local residents, the nearby businesses, local governments and Luke, the nation's premier training base for F-16 pilots.

The concerns are legitimate. They are twofold: safety of so large an amount of natural gas



Sources: Interstate Oil and Gas Compact Commission, El Paso Natural Gas Co.

Dan Kempton/The Arizona Republic

stored underground in an urban setting and the impact a project of this magnitude would have on Luke's mission and base's ability to survive the next round of closings in 2005.

To say the least, a storage facility and a 36-inch pipeline around the base and across its Accident Potential Zone are as compatible as oil and water.

El Paso makes the case that growth in the Valley will increase the demand for natural gas and that a storage facility would give customers adequate supplies at lower cost when there are sudden surges in demand. It's a logical argument that demonstrates the need for more infrastructure in the region to accommodate our growth curve, whether it be El Paso or some other gas company willing to supply the gas that we'll need.

That said, the potential impact of El Paso proposed Copper Eagle storage facility is far too great a risk. An independent risk analysis revealed that under certain climate conditions, a gas leak of 7 percent of capacity could produce an explosive plume covering an area of 2.8 miles, which, according to Rusty Mitchell, chief of Luke's community initiatives team, would "cover the entire base."

The opposition of the base, cities, lawmakers and landowners is solely based on the location. They are all too familiar with an El Paso pipeline explosion in 2000 near Carlsbad, N.M., that killed 12 campers.

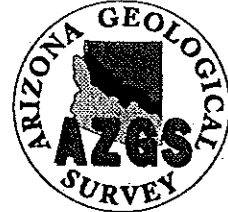
Surely there are salt caverns not smack in the middle of a vast urban area — a region that will get denser in the years ahead. They would be far more appropriate.



Janet Napolitano  
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Larry D. Fellows  
Director and State Geologist

January 26, 2004

Mr. Greg Gettman  
El Paso Western Pipeline  
2 North Nevada Ave  
Colorado Springs CO 80903

Re: Wells 1-24 SunCor (Permit 909), 1-19 SunCor (Permit 911), and  
1-12 Kakerlee (Permit 912)

Dear Mr. Gettman:

This letter will confirm that the Oil and Gas Conservation Commission voted in its meeting of January 23, 2004, to grant temporary abandonment to the referenced wells for a period of five years.

Sincerely,

A handwritten signature in cursive script that reads "Steven L. Rauzi".

Steven L. Rauzi  
Oil & Gas Administrator

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January 7, 2004

Mr. Steven Rauzi  
State of Arizona  
Oil & Gas Conservation Commission  
416 West Congress  
Suite 100  
Tucson, AZ 85701

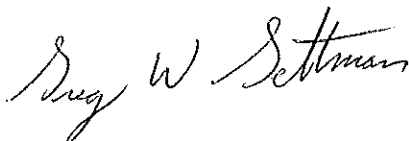
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RE: Copper Eagle Gas Storage LLC  
Kakerlee #1-12 (Sec. 12, T2N, R2W)  
✓ SunCor Development #1-19 (Sec. 19, T2N, R1W) ✓  
SunCor Development #1-24 (Sec. 24, T2N, R2W)  
Maricopa County, AZ

Dear Mr. Rauzi:

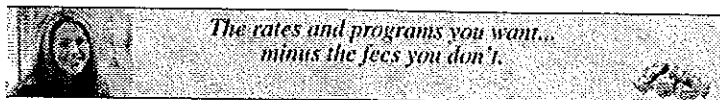
Attached are the Sundry Notice and Reports Forms requesting approval from the Arizona Oil and Gas Conservation Commission to temporarily abandon the captioned wells for up to five years pursuant to the provisions of ACC R12-7-125. The referenced schematic for the Kakerlee 1-12 will be provided in a subsequent mailing. If you have any questions or require additional information, please give me a call at (719) 520-4533.

Sincerely,



Greg W. Gettman  
Manager, Facility Planning





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## Luke opposed to gas plan

*Firm wants storage in cave near base*

David Madrid  
The Arizona Republic  
Jan. 2, 2004 12:00 AM

El Paso Natural Gas Co. plans to store 9.6 billion cubic feet of natural gas in mammoth salt caverns located within a mile of Luke Air Force Base, its hospital, school and base housing.

The base, some of its neighbors and local and state officials oppose the proposed facility, citing the safety of the people who live and work nearby. But there is also fear that a natural gas storage facility could damage Luke at a time when the state is trying to protect the base from closing.

In 2005, a quarter of the nation's military bases will be targeted for closure.

"Allowing underground gas storage facilities within a few miles of an airfield would jeopardize Luke's mission and survival," said state Rep. John Nelson, R-Phoenix.

El Paso Natural Gas Co. owns 455 acres west of El Mirage Road between Northern and Glendale avenues. The company wants to build the Copper Eagle gas storage facility there because of a significant underground salt dome, where the company could create three large salt caverns. Each of the caverns could store 3.2 billion cubic feet of natural gas. The roof of the dome would be one-half mile underground, according to company officials.

El Paso wants to use the salt caverns because large quantities of natural gas can be stored there cheaply, salt is a good storage medium and the caverns are inexpensive to build.

### 36-inch pipeline

In addition to the storage facility, a proposed 36-inch natural-gas pipeline would skirt Luke to the west and north and then connect to the facility.

Col. Pete Costello, vice commander of Luke, said he has met with the gas company's representatives, landowners who live near the base and local government officials.

"Based on the current information we have, we at Luke are opposed to the project," Costello said.

### Wind a problem

An independent analysis of the risks associated with a potential gas leak indicates the wind could carry natural gas over Luke Elementary School, base housing, Luke Air Force Base Hospital and the base itself, Costello said.

"From Luke's perspective, there are no benefits, only risks," Costello said.

### Public info vowed

Kim Wallace, a spokeswoman for El Paso Natural Gas Co., said it is so early in the process that there haven't been any public meetings yet, but eventually the company must provide information to the public and hold meetings.

The company also will work with regulatory agencies to make sure everything is

done properly, she said.

### Safety paramount

"Obviously, safety is absolutely paramount for us," Wallace said. "It's more important than anything else. So we're going to put it (facility) through all the testing and be sure and be in constant contact with all the stakeholders in order to make it absolutely as safe as possible."

She said the facility will be state-of-the-art and follow all safety regulations.

"The driver for the location is simply the geology for where the salt dome itself is," Wallace said.

If Nelson, a West Valley legislator, has his way, the natural-gas storage facility won't be built anywhere near Luke.

### Bill sets limits

He has drafted a bill that would prohibit underground natural-gas storage facilities from being built within three miles of a municipality or civilian or military airport.

### 'Wait a minute'

"I think this is practical legislation that is not retributive towards anybody, or trying to be obstructive," he said. "It's saying 'Wait a minute, the community has a right to exist without having something of this magnitude dumped on it.'"

### Law needed

Nelson said the state should have a stringent and straightforward law in place to help strengthen its position when it comes time for the Federal Energy Regulatory Commission's approval process.

"That tells them what the feeling of the state is as far as the location of these facilities," he said. "We're not saying don't do it; we're saying don't do it here."

County Supervisor Max Wilson said the county plans to hire an attorney experienced with natural gas facilities and pipelines so that the county can be prepared to deal with the issue. "We're just getting our ducks lined up," he said.

### Worried over accident

Wilson said he is concerned that an accident similar to what happened near Carlsbad, N.M., could happen near Luke. On Aug. 19, 2000, an El Paso Natural Gas Co. 30-inch pipeline ruptured and exploded killing 12 people who were camping nearby. The gas burned for 55 minutes, and flames reached an estimated 490 feet high.

Wallace said the gas company learned a lot from the Carlsbad accident. She said it spent millions of dollars over the past three years modifying its pipeline system, making it safer and easier to inspect.

### Suffocation danger

Douglas Fant, a local attorney who worked 19 years in the oil and gas industry, says the gas that will be moving through the 36-inch pipeline will have no odor or color and that if enough escapes, it would displace oxygen and suffocate people.

"So that can be a problem for people sleeping in neighborhoods," Fant said.

If the escaped gas ignited, it would explode, he said.

Fant said there are other less populated locations in the state the gas company should be considering.

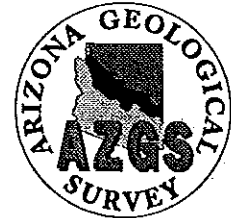
He said there are similar salt formations near Kingman and Picacho Peak between Tucson and Phoenix.



Janet Napolitano  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500  
[www.azgs.az.gov](http://www.azgs.az.gov)



Larry D. Fellows  
Director and State Geologist

December 17, 2003

Mr. Greg Gettman  
El Paso Western Pipeline  
2 North Nevada Ave  
Colorado Springs CO 80903

911

Re: Wells 1-24 SunCor (Permit 909), 1-19 SunCor (Permit 911), and  
1-12 Kakerlee (Permit 912)

Dear Greg:

As we discussed, A.A.C. R12-7-125 requires an operator to plug a well after suspending operations unless the Oil and Gas Conservation Commission (OGCC) permits the well to be temporarily abandoned. It is now necessary for El Paso to request temporary abandonment for the referenced wells in accordance with R12-7-125. El Paso can then continue its evaluation of the wells in accordance with R12-7-125(D).

The next meeting of the OGCC is scheduled for January 23, 2004 in Phoenix. Please submit a written request for temporary abandonment in accordance with R12-7-125(B) before January 9, 2004 and the OGCC will place the request on the agenda for the January 23 meeting.

I have enclosed a copy of A.A.C. R12-7-125 and a Sundry Notice Form for your reference and use. Please call me if you have any questions.

Sincerely,

Steven L. Rauzi  
Oil & Gas Administrator

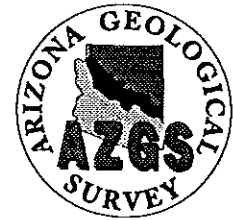
Enclosure



Janet Napolitano  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500  
[www.azgs.az.gov](http://www.azgs.az.gov)



Larry D. Fellows  
Director and State Geologist

October 15, 2003

Mr. Matt Reid  
Arizona Public Service  
Mail Station 8974  
P O Box 52034  
Phoenix AZ 85072-2034

911

Re: Release of Bonds:

Permit #909 – Bond No. 929224112, Continental Casualty Company  
Permit #911 – Bond No. 929237470, Continental Casualty Company  
Permit #912 – Bond No. 929237471, Continental Casualty Company

Dear Mr. Reid:

Our records indicate that Copper Eagle Gas Storage LLC has posted a new performance bond for the referenced wells in accordance with R12-7-103(C). As a result, this letter constitutes written permission to terminate liability under the referenced bonds.

Sincerely,

Steven L. Rauzi  
Oil and Gas Administrator

c Larry D. Fellows, Director and State Geologist



Matt Reid  
APS Fuel Procurement

Tel. 602-250-3109  
Fax 602-250-3628  
e-mail [mjreid@apsc.com](mailto:mjreid@apsc.com)

Mail Station 8974  
PO Box 52034  
Phoenix, Arizona 85072-2034

October 15, 2003

Mr. Steve Rauzi  
Oil & Gas Administrator  
State of Arizona  
Arizona Geological Survey  
416 Congress, Suite 100  
Tucson, AZ 85701

911

**Subject: Release of Performance Bonds for Stratigraphic Test Wells #1-24, 1-19 and 1-12**

Dear Steve:

I understand that the new owner of Copper Eagle Gas Storage, LLC has provided replacement bonds for the subject stratigraphic test wells. The purpose of this letter is to request the release of the performance bonds listed below:

- ◆ Bond 929224112, October 23, 2001 – Stratigraphic Test Well site 1-24 near Cotton Lane and Indian School
- ◆ Bond 929237470, June 4, 2002 for Stratigraphic Test Well site 1-19 near Camelback and west of Reems
- ◆ Bond 929237471, June 4, 2002, for Stratigraphic Test site 1 - 12 near Bethany Home and Sarival Road

If you have any questions or need additional information, please contact me at 602 250-3109.

Sincerely,

Matt Reid  
Arizona Public Service

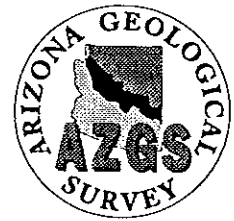
Xc: Curt Brechtel (APS)  
Kerri Baginski (PWCC)



Janet Napolitano  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500  
[www.azgs.az.gov](http://www.azgs.az.gov)



Larry D. Fellows  
Director and State Geologist

October 14, 2003

Ms. Gloria Burkes  
Insurance Analyst  
Insurance and Risk Management  
El Paso Corporation  
P O Box 2511  
Houston TX 77252-2511

Dear Ms. Burkes:

I have enclosed an approved duplicate original blanket performance bond,  
Serial No. 104154344, for your files.

Sincerely,

*Steven L. Rauzi*

Steven L. Rauzi  
Oil & Gas Administrator

Enclosure

911



October 8, 2003

Oil and Gas Conservation Commission  
Oil and Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress #100  
Tucson, AZ 85701

911

Re: Copper Eagle Gas Storage LLC

Dear Sir or Madam:

Please find the enclosed Performance bond (2 copies) for Copper Eagle Gas Storage, LLC. The bond guarantees that Copper Eagle will comply with the provisions and regulations for the well operations with the state of Arizona.

Please call me at (713) 420-4351 with any questions regarding this matter.

Very truly yours,

A handwritten signature in cursive script that reads "Gloria Burkes".

Gloria Burkes  
Insurance Analyst  
Insurance and Risk Management

Enclosure

cc: D.D. Hankins

9-24-03 Call Greg Gettman

Jay Hawley, Spicer Wildlife, wanted to bid  
= OK to give them Greg's phone # but already has contractors lined up.  
El Paso has blanket certificate from FERC which requires any work  
in AZ be notified to Indian tribes  
Tribes have 45 days to review for cultural significance to tribes  
∴ postpone start date to morning viz to ~ NOV 7

10-14-03 Greg Gettman called

ADEQ is requiring CEGS to get a temporary APP.  
Now in process of putting that together.  
File by end of this month or Nov 1  
ADEQ has by statute 145 days to review + approve or disapprove  
Can possibly get it done in 60-90 days.  
Morton only has brine available between Jan - March.  
∴ If ADEQ delays beyond 1st of year will delay one year.  
He will send me a copy of Temp APP application.

9-11-03 Review Injection test in office with Greg Gettman

Project to return 90 mm bbls brine total for 3 cavities  
About 30 mm bbls brine / cavity ( $\approx 4.2$  mm bbls vol / cavity)  
Access to 2200 gpm water from SunCor.

Pressure transient tests indicate the following rates below the frac gradient

- # 1-19 well 2400 gpm if skin blockage cleaned up  
Schlumber analysis concludes skin block
- # 1-12 well 30 gpm  
Micro frac test showed frac gradient is 0.94 psi/ft
- # 1-24 well 300 gpm

Step-rate tests in three wells:

- 1- were too short duration to conclude reservoir volume
- 2- Indicated that # 1-19 well was best candidate.

$\therefore$  Need to conduct long-term injection test to determine feasibility of injecting 90 mm bbls of brine from project.

- Test data is essential for intelligent review of application for inj. permit
- Proposed test rates + pressures  $\approx 0.727$  psi/ft are below frac gradient 0.94 psi/ft.  
( $= 5$  bpm  $\approx 300$  bph  $\approx 7200$  bpd  $\approx 216,000$  bpm  $= 432,000$  bbls/60 days)
- Conditions in R12-7-117 & R12-7-179 protect aquifers and environment

$\Rightarrow$  Approve test. Geological information about porosity, permeability and reservoir volume is essential information for application

(911)



1-19      Salt      1846' - 7468' (5622')  
             Volc      7485'  
             d. fault      7550' (chlorite and increase density)  
                            Between 7500' - 7800' possible  
             bsmt Rk      7800'  
             TD      8307

Fluid samples below salt ~ 85,000 - 90,000 ppm  $\text{Cl}^-$

1-12      Salt      5430' - 7088' (1658')  
             Volc      7180'  
             d. fault      7190' (mark of chlorite and epidote)  
                            7400' below fault

1-24      Salt      4944' - 5373' (stringers ~ 300')  
             d. fault      5373'

Jim Fink reported water in detachment fault  
in the Tucson Basin in some fracture p & p.

September 10, 2003

Mr. Steven Rauzi  
State of Arizona  
Oil & Gas Conservation Commission  
416 West Congress  
Suite 100  
Tucson, AZ 85701

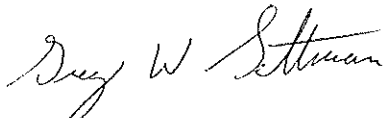
RE: Copper Eagle Gas Storage LLC  
Suncor #1-19 Stratigraphic Test  
Sec. 19, T2N, R1W  
Maricopa County, AZ

Dear Mr. Rauzi:

Attached is the Sundry Notice and Reports Form requesting approval from the Arizona Oil and Gas Commission to reenter the Suncor #1-19 Stratigraphic Test Well, clean up, stimulate the open hole section, and conduct a 60 day brine injection test followed by monitoring the pressure falloff for 120 days. The specifics of the proposed work are detailed on the Sundry Notice Form and attached exhibits. The completion of this work will provide valuable reservoir information to determine the ultimate viability of using this well to dispose the large volumes of brine necessary for the development of the natural gas storage caverns for the Copper Eagle Project. We recognize that the Suncor #1-19, and other stratigraphic test wells we acquired with Copper Eagle, would need to be permitted under appropriate provisions of the EPA Underground Injection Control regulations prior to use as brine disposal wells, and we intend to do so if the results of this test indicate that the target geologic stratum can accommodate the volumes of brine that would be produced by the actual cavern development operations.

We tentatively plan to commence the reentry of the Suncor #1-19 Stratigraphic Test during the week of October 13, 2003. The brine injection test will then commence on approximately November 1, 2003 and extend to December 30, 2003.

Please give me a call at (719) 520-4533 if you have any questions or require additional information.

A handwritten signature in cursive script, reading "Greg W. Gettman".

Greg W. Gettman  
Manager, Facility Planning  
El Paso Western Pipelines

Re: Sundry Notice form

Subject: Re: Sundry Notice form  
From: Steve Rauzi <Steve.Rauzi@azgs.az.gov>  
Date: Wed, 27 Aug 2003 07:09:16 -0700  
To: "Gettman, Greg W" <Greg.Gettman@ElPaso.com>

*file 2-11 911*

You're welcome. Your proposed injection test in your temporarily abandoned stratigraphic hole to acquire information relative to R12-7-176(B) (3) and (4) would be subject to the conditions in R12-7-125(D), R12-7-117(B), and R12-7-179.

The rules may be viewed at [http://www.sosaz.com/public\\_services/Title\\_12/12-07.pdf](http://www.sosaz.com/public_services/Title_12/12-07.pdf)

Gettman, Greg W wrote:

Thanks Steve!

Greg Gettman  
Manager, Facility Planning  
El Paso Corporation  
Western Pipelines  
Office (719) 520-4533  
Fax (719) 520-4668  
Cell (719) 351-4093  
[greg.gettman@elpaso.com](mailto:greg.gettman@elpaso.com)

-----Original Message-----

From: Steve Rauzi [<mailto:steve.rauzi@azgs.az.gov>] Sent: Monday, August 25, 2003 11:13 AM  
To: Gettman, Greg W  
Subject: Sundry Notice form

A Sundry Notice form is attached

\*\*\*\*\*  
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\*\*\*\*\*

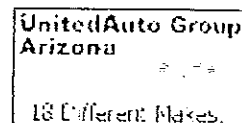
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911  
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## Pinnacle West sells 50% stake in W. Valley gas storage site



advertisement

Max Jarman  
The Arizona Republic  
Aug. 27, 2003 12:00 AM

Pinnacle West Energy reported Tuesday that it sold its 50 percent stake in a proposed natural gas storage facility west of Phoenix to a subsidiary of El Paso Corp. for \$11.7 million.

The Pinnacle West Capital Corp. unit sold its interest in the project to El Paso Natural Gas, a natural gas supply firm. Its parent, El Paso Corp., is the nation's largest operator of natural gas pipelines and owner of the lines that serve Maricopa County and much of Arizona. El Paso also purchased the remaining 50 percent interest in the project from GulfTerra Energy Partners and Gaz de France.

The facility has been on the drawing board since 2001 and would help to ensure a stable supply of natural gas for heating and electricity generation. It also would help ensure stabler consumer prices for those commodities.

The project, near Glendale and Dysart roads in western Maricopa County, involves the construction of three massive underground storage caverns, thousands of feet below ground. The caverns would be carved out of an existing natural salt deposit using pressurized water.

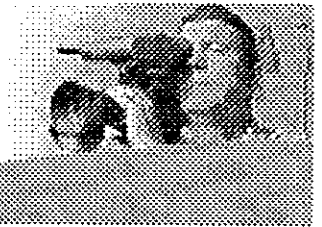
Combined, the tanks would be capable of storing 3.2 billion cubic feet of gas, enough fuel to run a 2,000-megawatt power plant for 10 days. A megawatt can light about 800 homes.

El Paso intends to seek permission from federal regulators to build the storage caverns by April and begin storage in early 2007.

### Find this article at:

<http://www.azcentral.com/arizonarepublic/business/articles/0827gasstorage270.html>

☐ Check the box to include the list of links referenced in the article.



**August 25, 2003**

## **Pinnacle West Energy sells gas storage interest to El Paso Natural Gas**

PHOENIX – Pinnacle West Energy, a subsidiary of Pinnacle West Capital Corp. (NYSE: PNW), announced today that it has sold its 50-percent interest in the proposed Copper Eagle Gas Storage project to El Paso Natural Gas Company, a subsidiary of El Paso Corporation. (NYSE: EP).

Pinnacle West continues to support the development of Copper Eagle because of the critical role it would play in increasing the reliability of the energy infrastructure in the West. El Paso Natural Gas brings the appropriate experience to the development and operation of a project of this nature.

"This kind of facility is essential to the Southwest's continuing economic health and the reliability of the power supply in the West," said Jim Levine, President and CEO of Pinnacle West Energy. "The electricity market in this region is becoming increasingly more dependent on natural gas, and storage projects like Copper Eagle will provide additional security for Arizona's fuel supply during periods of high electricity and gas demand.

"Because Pinnacle West believes development of gas storage is critical to the reliability of our regional gas supply, we have sold our interest in the project to a company with the appropriate experience in the natural gas industry," he said. "Through Arizona Public Service and Pinnacle West Energy, we are focused on our core business, which is providing reliable electric service to our retail customers throughout Arizona."

Copper Eagle is a proposed natural gas storage project that would be located near Luke Air Force Base in western Maricopa County. Feasibility studies began in 2001 on a naturally occurring salt deposit in the area 20 miles west of Phoenix to determine if it has the potential to support the underground cavern storage facility.

Pinnacle West Capital Corp. is a Phoenix-based company with consolidated assets of approximately \$9 billion. Through its subsidiaries, the company generates, sells and delivers electricity and sells energy-related products and services to retail and wholesale customers in the western United States. It also develops residential, commercial and industrial real estate projects.

### **Contacts**

**Media:**

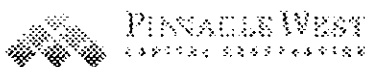
Jim McDonald; 602-250-3738, 602-321-3738 (cell)

**Analyst:**

Rebecca Hickman, (602) 250-5668

Sheri Foote; 602-250-2363, 602-684-1332 (cell)

### **News Releases Index**



## ***El Paso Natural Gas Company Announces Purchase of Copper Eagle LLC***

**HOUSTON, TEXAS, August 6, 2003**—El Paso Natural Gas Company, a subsidiary of El Paso Corporation (NYSE:EP), today announced the purchase of Copper Eagle Gas Storage, LLC, which is developing a natural gas storage project located outside of Phoenix, Arizona.

The development of the storage project will include the creation of three storage caverns out of an existing sub-surface salt formation thousands of feet beneath the earth's surface. Each cavern will have a withdrawal capacity of 320,000 thousand cubic feet per day (Mcf/d), injection capacity of 160,000 Mcf/d, and a working gas storage capacity of 3.2 billion cubic feet. Each cavern could supply the natural gas required to fuel 2,000 megawatts of electric power generation for 10 days. The number of caverns that are developed and the timing of the development will be matched with customer needs. The storage facility will be connected to the El Paso Natural Gas pipeline system, which delivers natural gas supplies to the southwest, including the Phoenix area.

"Copper Eagle Gas Storage could be the first natural gas storage project developed in the Phoenix area," said Patricia A. Shelton, president of the Western Pipeline Group for El Paso Corporation. "We are excited to offer an important new source of natural gas storage and related services to the markets in and around this area through the development of this project. Copper Eagle can benefit our customers by providing a more secure and flexible gas supply for the region's local distribution companies and electric generators on a year-round basis. We are eager to move forward with this project as soon as we receive long-term commitments from our customers."

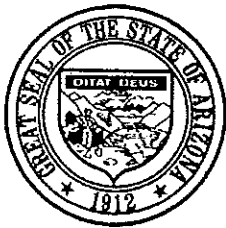
El Paso Natural Gas plans to hold a non-binding open season in the near future to gauge customers' specific needs from the project in order to assist in determining the sizing of the facilities and the types of services that will be offered. If sufficient commitment exists, the company's goal is to file for authorization to construct and operate the facility with the Federal Regulatory Energy Commission by April of 2004, with a projected first cavern in-service date for the project in early 2007.

El Paso Natural Gas purchased the project from Arizona Gas Storage L.L.C. and APACS Holdings L.L.C. Arizona Gas Storage is owned by GulfTerra Arizona Gas L.L.C., a subsidiary of GulfTerra Energy Partners, L.P. (NYSE:GTM); and IntraGas US, a Gaz de France North American subsidiary. APACS Holdings L.L.C. is a wholly owned subsidiary of Pinnacle West Energy, a subsidiary of Pinnacle West Capital Corp. (NYSE:PNW).

El Paso Corporation is the leading provider of natural gas services and the largest pipeline company in North America. The company has core businesses in pipelines, production, and midstream services. Rich in assets, El Paso is committed to developing and delivering new energy supplies and to meeting the growing demand for new energy infrastructure. For more information, visit [www.elpaso.com](http://www.elpaso.com).

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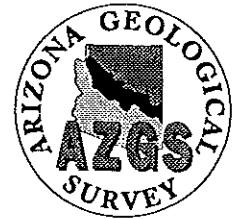
This This release includes forward-looking statements and projections, made in reliance on the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. The company has made every reasonable effort to ensure that the information and assumptions on which these statements and projections are based are current, reasonable, and complete. However, a variety of factors could cause actual results to differ materially from the projections, anticipated results or other expectations expressed in this release, including, without limitation, the successful implementation of the 2003 operational and financial plan; the successful implementation of the settlement related to the western energy crisis; actions by the credit rating agencies; the successful close of financing transactions; our ability to successfully exit the energy trading business; our ability to divest of certain non-core assets; changes in commodity prices for oil, natural gas, and power; general economic and weather conditions in geographic regions or markets served by El Paso Corporation and its affiliates, or where operations of the company and its affiliates are located; the uncertainties associated with governmental regulation; political and currency risks associated with international operations of the company and its affiliates; inability to realize anticipated synergies and cost savings associated with restructurings and divestitures on a timely basis; difficulty in integration of the operations of previously acquired companies, competition, and other factors described in the company's (and its affiliates') Securities and Exchange Commission filings. While the company makes these statements and projections in good faith, neither the company nor its management can guarantee that anticipated future results will be achieved. Reference must be made to those filings for additional important factors that may affect actual results. The company assumes no obligation to publicly update or revise any forward-looking statements made herein or any other forward-looking statements made by the company, whether as a result of new information, future events, or otherwise.



Janet Napolitano  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500  
[www.azgs.az.gov](http://www.azgs.az.gov)



Larry D. Fellows  
Director and State Geologist

April 23, 2003

Mr. Greg Gettman  
El Paso Western Pipeline  
2 North Nevada Ave  
Colorado Springs CO 80903

911

Dear Greg:

I have enclosed a copy of our Bulletin 195, *Geology of the South Mountains, Central Arizona*, an article from the Geological Society of America Special Paper 323, *Seismic reflection evidence for detachment polarity beneath a major accommodation zone, west-central Arizona*, and excerpts from our Contributed Report CR-02-A, *Subsurface geology of the easternmost Phoenix basin, Arizona: implications for groundwater flow*, and USGS Administrative Report, *Investigation of hydrogeology, land subsidence, and earth fissures, Luke Air Force Base, Arizona*. These represent relatively recent thinking about the geology and geologic framework of the area.

Note the section on chloritic breccia on page 21 in Bulletin 195. Some of the core from the deep strat tests resembles chloritic breccia. Contributed Report CR-02-A is available on a CD.

Our research geologists Jon Spencer and Steve Richard are available, unless they are in the field, to share their understanding and knowledge of Arizona geology with you. I understand that Herb Schumann, co-author of the Administrative Report, now consults out of Tempe (480-945-6577).

I hope this helps.

Sincerely,

Steven L. Rauzi  
Oil & Gas Administrator

Enclosures

Subject: Re: Copper Eagle Temporarily Abandoned Stratigraphic Test Wells  
From: Steve Rauzi <Steve.Rauzi@azgs.az.gov>  
Date: Thu, 06 Mar 2003 06:59:15 -0700  
To: "Hayden, David" <David.Hayden@ElPaso.com>

911

All seems to be in order. However, do not forget to file core samples (1-12) and a summary of test results (1-19 and 1-12) in accordance with R12-7-121 when they are available. Keep in touch. SLR

Hayden, David wrote:

Steve:

It has been sometime since we talked and I wanted to provide an update. As you know, Copper Eagle completed the drilling and testing of its stratigraphic test wells in Sections 24, 19 and 12 (the SunCor 1-24, SunCor 1-19 and Kakerlee 1-12) and temporarily abandoned the wells subject to possible future utility. The data derived from these wells is being analyzed (several thin section analyses from the Kakerlee core are still in progress) but early indications are encouraging. It is still Copper Eagle's plan to finalize a Class I Application which would propose that these wells ultimately be completed and used to dispose of brine related to the leaching of caverns for natural gas storage. As you are aware Copper Eagle will need to obtain approvals from numerous regulatory agencies, including the AZ Oil & Gas Conservation Commission, the EPA and the FERC, and this process will take time. It is Copper Eagle's understanding that the Commission allows an operator to temporarily abandon wells (as Copper Eagle has done with the Commission's approval) but would like to clarify and/or determine if Copper Eagle needs to take any further action relative to the status of these wells. As per R12-7-125(B), it appears that an operator may temporarily abandon wells for up to 5 years if the operator has provided the required information pursuant to the regulations and has demonstrated a future beneficial use for the wells to a quorum of the Commission. Is there additional information or action required by Copper Eagle to fulfill the regulatory requirements relative to the temporarily abandoned status of the three wells noted above? Your comments are as always greatly appreciated!

Thanks,

**David Hayden**  
Sr. Vice President  
Crystal Gas Storage, an El Paso company  
401 Edwards Street, Suite 1300  
Shreveport, LA 71101  
318.677.5511

\*\*\*\*\*  
This email and any files transmitted with it from the El Paso Corporation are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the sender.  
\*\*\*\*\*



**Subject:** Re: Schlumberger logs  
**From:** "Hayden, David" <David.Hayden@ElPaso.com>  
**Date:** Wed, 11 Sep 2002 13:24:39 -0500  
**To:** "steve.rauzi@azgs.az.gov" <steve.rauzi@azgs.az.gov>

Will do.

Thanks

-----  
Thanks,

David Hayden  
Sent from my BlackBerry Wireless Handheld ([www.BlackBerry.net](http://www.BlackBerry.net))

mailbox:///C:/WINNT/Profiles/srauzi/Application%20Data/Mozilla...

**Subject:** Schlumberger logs  
**From:** Steve Rauzi <Steve.Rauzi@azgs.az.gov>  
**Date:** Wed, 11 Sep 2002 11:21:00 -0700  
**To:** Dave Hayden <david.hayden@elpaso.com>

Dave, I received the Schlumberger logs today. Don't forget to file the mud log and tests results when they are available. Steve.

mailbox:///C:/WINNT/Profiles/srauzi/Application%20Data/Mozilla...

**Subject:** Suncor 1-19 Logs  
**From:** <haydend@imcingular.com> (david hayden)  
**Date:** Tue, 10 Sep 2002 12:40:39 -0400  
**To:** steve.rauzi@azgs.az.gov

Steve:

We received final logs today and a package is being sent to you via Fedex for delivery tomorrow.

Tanks for your patience

David

David Hayden

*file 911*

**VIA FEDERAL EXPRESS**

September 10, 2002

Mr. Steven Rauzi  
Arizona Geological Survey  
416 W. Congress  
Suite 100  
Tucson, AZ 85701

RE: Suncor Development #1-19 Well  
Copper Eagle Project  
Maricopa County, AZ



Dear Mr. Rauzi:

Pursuant to instructions received from David Hayden, please find enclosed the following well logs for the Suncor Development #1-19 well located in Maricopa County, Arizona:

1. Micro Cilindrically Focused Log, Final Composite (5" = 100')
2. Micro Cilindrically Focused Log, Final Composite (2" = 100')
3. Triple Litho Density Compensated Neutron, Final Composite (5" = 100')
4. Triple Litho Density Compensated Neutron, Final Composite (2" = 100')
5. High Resolution Lateralog Array, Final Composite (5" = 100')
6. High Resolution Lateralog Array, Final Composite (2" = 100')

Sincerely,

  
Julie Smith

/js

enclosures (6)

*file 911*

**Subject:** RE: Arizona Sundry Form  
**From:** "Jim Lingafelter" <Jim.Lingafelter@brammer.com>  
**Date:** Fri, 6 Sep 2002 11:14:30 -0500  
**To:** "Steve Rauzi" <steve.rauzi@azgs.az.gov>

Will Do.

Thanks

Jim Lingafelter  
Office: 318-429-2399  
Cell: 318-347-2799

-----Original Message-----

**From:** Steve Rauzi [mailto:steve.rauzi@azgs.az.gov]  
**Sent:** Friday, September 06, 2002 9:59 AM  
**To:** Jim Lingafelter  
**Subject:** Arizona Sundry Form

Dear Jim,

I received your reports for the #1-19 hole. I've attached a Sundry Notice for your use. Please replace the one you have been using with this clean copy .

Since the CEGS holes are being temporarily abandoned I need a Sundry Report for the Commission's files describing the spud date, TD, date TD reached, complete casing record, and number of cores and tests conducted. Most of this information is included on the application to plug and plugging record you submitted for the #1-19 hole. I need this information summarized for the #1-24 hole, which was drilled in January, on a Sundry Notice. Thank you.

Steven L. Rauzi  
Oil & Gas Administrator  
520.770.3500

## More stratigraphic drilling planned in Phoenix area

**C**OPPER EAGLE Gas Storage LLC, Phoenix, has plans to drill two 9000-ft stratigraphic tests in south-central Arizona on the western outskirts of the greater Phoenix metropolitan area.

The Maricopa County ventures, both under contract to Nabors Drilling USA, are the 1-12 Kakerlee LLP, ne se 12-2n-2w, and—one and a half miles to the southeast—the 1-19 SunCor Development Co, ne ne 19-2n-1w.

Two and a half miles south-southwest of the 1-12 Kakerlee site, Copper Eagle last November scheduled a 7500-ft stratigraphic test at the 1-24 SunCor Development Co-Fee in sw sw 24-2n-2w (RMRR 11-6-01).

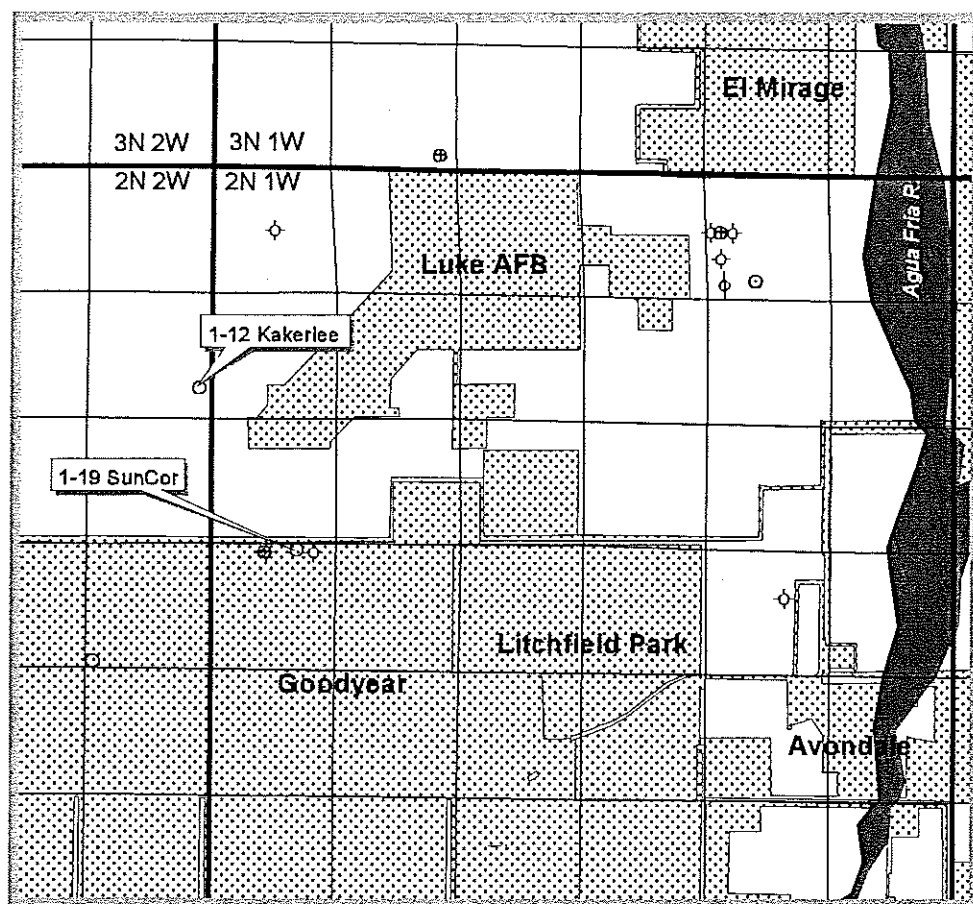
SunCor Development Co, a wholly owned subsidiary of Pinnacle West Capital Corp—among other things the holding company for Arizona Public Service, Arizona's largest electric utility—is a Phoenix-based real estate developer.

SunCor last year drilled the 1-2 SunCor Development Co, se sw 2-2n-1w, a stratigraphic test projected to reach total depth at about 5250 ft. The latter well was drilled by Nabors' Rig #164 on undeveloped acreage

adjacent to an industrial area just east of Luke Air Force Base (RMRR 1-10-01). It was expected to be drilled into the Miocene Luke salt deposit.

latter well drilled into Miocene salt at a depth of 1716 ft.

In 1992, Arrowhead Resources (USA) Ltd completed a 6650-ft dry



Copper Eagle's 1-19 SunCor site is about 140 ft west of a 4000-ft dry hole completed in 1988 by Bob James Drilling & Exploration at the 1-19 SunCor, also ne ne 19-2n-1w. The

hole at the 32-23 SunCor-Melange in sw ne 23-2n-1w. That wildcat, which had been set up to penetrate volcanics, encountered a water aquifer at a depth of 400-600 ft.



Jane Dee Hull  
Governor

State of Arizona  
**Arizona Geological Survey**  
416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

June 7, 2002

David R. Smith  
County Administrative Officer  
301 W. Jefferson  
Phoenix, AZ 85003  
602-506-3571

Re: Copper Eagle Gas Storage LLC stratigraphic test holes  
#1-19 SunCor NE NE Sec. 19, T. 2 N., R. 1 W., State Permit #911  
#1-12 Kakerlee NE SE Sec. 12, T. 2 N., R. 2 W., State Permit #912

Dear Mr. Smith:

I have enclosed a copy of the approved drilling applications for the referenced wells. It is the Arizona Oil and Gas Conservation Commission's policy to inform county government about proposed exploration and stratigraphic drilling. The referenced wells are stratigraphic tests. They are being drilled for the sole purpose of obtaining subsurface geological information.

The Commission issues a "Permit to Drill" under A.R.S. § 27-513. The Commission approves an application after a well is determined to be in compliance with applicable statutes (A.R.S. § 27-516) and rules (12 A.A.C. 7), which were promulgated to safeguard the public health and safety and protect surface and subsurface resources.

Sincerely,

Steven L. Rauzi  
Oil and Gas Administrator

Enclosure

c J. Dale Nations, Chairman, Oil and Gas Conservation Commission  
Larry D. Fellows, Director and State Geologist



Jane Dee Hull  
Governor

State of Arizona  
**Arizona Geological Survey**  
416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

June 6, 2002

Mr. Matt Reid  
Copper Eagle Gas Storage LLC  
400 N 5th Street MS 8974  
Phoenix AZ 85004

Re: Copper Eagle Gas Storage LLC stratigraphic test holes:  
#1-19 SunCor, NE NE Sec. 19, T. 2 N., R. 1 W., State Permit #911  
# 1-12 Kakerlee, NE SE Sec. 12, T. 2 N., R. 2 W., State Permit #912

Dear Matt:

I have attached an approved application to drill, permit to drill, performance bond, and filing-fee receipt for each of the referenced wells.

These permits are issued on the condition that you conduct operations in compliance with all applicable rules and that you notify me at least 24 hours before you:

- 1) move in the drilling rig and commence drilling operations;
- 2) run and cement surface casing; and
- 3) nipple up and test the BOPE before drilling out of the surface casing.

A sign at the well site is required under rule R12-7-106. Drilling samples are required under rule R12-7-121(B).

Sincerely,

Steven L. Rauzi  
Oil & Gas Administrator

Enclosures



Jane Dee Hull  
Governor

State of Arizona  
**Arizona Geological Survey**  
416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

**MEMORANDUM TO FILE**

DATE: May 22, 2002

FROM: *SLR* Steven L. Rauzi  
Oil and Gas Administrator

SUBJECT: Known and reasonably estimated freshwater aquifers in vicinity of  
Copper Eagle's proposed stratigraphic test holes:

#1-19 SunCor, ne ne 19-2n-1w, Maricopa County, State Permit #911  
#1-12 Kakerlee, ne se 12-2n-2w, Maricopa County, State Permit #912

Rick Herther, Basic Data Section, Arizona Department of Water Resources, provided the following information about the deepest water wells that are registered with the department in the vicinity of the proposed wells.

Sec. 19, T. 2 N., R. 1 W.

B(02-01)19aba, 722 ft deep, 20" diameter, drilled 1957, registered to SunCor Development Company - irrigation  
B(02-01)19cbb, 1220 ft deep, drilled 1954, registered to SunCor Development Company.

Sec. 12, T. 2 N., R. 2 W.

B(02-02)12d, 1200 ft deep, 20" diameter, drilled 1982, registered to Adam & Mutual Water Co., Litchfield Park.

Sec. 24, T. 2 N., R. 2 W. (Most registered to SunCor Development Company)

B(02-02)24bbb, 998 ft deep.  
B(02-02)24cbb, 1007 ft deep.  
B(02-02)24ccc, 1008 ft deep, 16" diameter, drilled 1966, water at 470 ft, registered to SunCor Development Company - irrigation.  
B(02-02)24dbb, 956 ft deep.  
Plus several monitoring wells less than 100 ft deep.

Sec. 25, T. 2 N., R. 2 W.

B(02-02)25abb, 2000 ft deep, drilled 1966, registered to SunCor Development Company.  
B(02-02)25bbb, 470 ft deep, 20" diameter, registered to Goodyear Tire & Rubber, Akron OH

Copper Eagle's proposal to set 13 3/8" surface casing from the surface to the top of the salt or 2500' will be sufficient to protect the surface waters and all other reasonably estimated aquifers in the vicinity of the proposed wells.